LEONARD INTRODUCES $112 REFRIGERATOR

(Concluded from Page 1, Column 5)

charge of sales, called the convention to order.

He spoke briefly of the growth of the Leonard organization, both in size and effectiveness, and referred to the changes wrought in that organization since the company's entry into the electric refrigeration field. Assuring the visitors of their welcome, he introduced George W. Mason, president of the company.

Mr. Mason was given an ovation by the assembled distributors as he rose to address them.

Mason Describes Trip

He spoke of conditions disclosed by the Western trip from which he and Mr. Burritt had just returned in order to be present at the convention. Congratulating the distributors upon the achievements of the past year, he dealt for a time with the management thinking behind the 1933 line and predicted better business and further growth in the year ahead.

After a few introductory remarks by R. I. Petrie, sales manager, the convention was given a dramatic touch. Spotlights picked out buglers in uniform, who sounded "Assembly." The curtain rose slowly, revealing the "Oldest Leonard," the 51-year-old ice box for which the company paid $500 last summer as the climax of a nationwide merchandising campaign.

The box was purchased from Mrs. Mary V. Peyton, 82-year-old resident of Stockton, Calif., who had continuously used it since she set up housekeeping in that city in 1881.

Presentation of Box

Standing guard over the box, which was bathed by floodlights, were two soldiers, rifles at "Present Arms." A young woman appeared from the wings, bearing a huge wreath of flowers, which she placed upon the box. A huge sign was lowered which read: "Veteran of 51 Years." Then was bugled the old army call, "Taps." As the curtain was slowly lowered, the orchestra struck up, "When You and I Were Young, Maggie."

The big auditorium then was darkened and, aided by a film presentation, Mr. Petrie launched into a point-by-point description of features of the new line. This was followed by the dramatic raising of the curtain on the new models. After the prolonged applause had subsided, Mr. Petrie went into a detailed description of each of the actual models, announcing the prices.

Slapstick Comedy

Slapstick comedy—to a point—followed the introduction of the new line. The curtain rose on a Leonard refrigerator, near which stood a kitchen table laden with a large collection of food and dishes. Two characters were on the stage, a trim housewife and a gawky Swedish maid. The housewife showed the servant how to place foods in the refrigerator.

Then, after a complete demonstration along this line, she slammed shut the refrigerator door and walked off the stage.

The servant awkwardly approached the cabinet, carrying a large collection of dishes. In her futile efforts to open the door, with both hands filled, she proceeded to smash most of the dishes. At times the air seemed as full of flying crockery as it was of cigar smoke.

Hearing the commotion, the housewife rushed back to the center of the stage and, to the servant's exaggerated amazement, showed how the door could be opened by touching the Len-A-Dor pedal with her toe.

'Leonard Gang' Introduced

Following a luncheon, which was served in the theater clubrooms, the distributors returned to the auditorium where they were formally introduced to "the Leonard gang"—members of the factory sales, advertising and sales promotion departments.

In an illustrated address, titled "Four Out of Five Don't Have It," Albert M. Taylor, merchandising director, pointed to the vast market yet to be sold electric refrigeration, detailed the aggressive advertising and merchandising programs which the company has outlined for the coming year, and bespoke the cooperation of the entire field organization in tying-in with the efforts of the home office.

Leonard Finance Plan

C. M. Armstrong, vice president of "Redisco" (Refrigeration Discount Corp.) discussed, "The New Leonard Finance Plan."

"An Ounce of Prevention," was the subject of E. A. Seibert, national director of service, who next took the platform.

Mr. Petrie then elaborated on the promotion of sales activities for the coming year, and Mr. Burritt addressed the convention on the subject, "October, 1931-1932-1933."

He spoke of October, 1931, as having brought before the public the new Leonard "with the extra features"; this October as marking the end of a remarkable period of distribution development; and predicted that the convention of 1933 would hear the story of an equally remarkable refinement of distribution methods.

Commenting upon the appearance in the industry of a number of manufacturers of low-priced models, he stated his belief that this development has been the natural outgrowth of the public's growing belief that "any electric refrigerator is good." Public confidence has grown to such an extent that the lowest-priced unit has been bought without misgivings."

Defines Dealer's Task

Mr. Burritt defined the task of Leonard's dealers as one of showing the public that, though all refrigerators may be good, some are better than others. Then he pointed to the list of Leonard special features as a means to this end.

The scene of the convention then was shifted to the Crystal Ballroom of the Book-Cadillac Hotel, where, after the annual banquet, the guests listened to President Mason, and E. L. Triffit, vice president of Brooke, Smith & French, Inc., the company's advertising counsel.

Humorist on Program

The banqueters then heard Strickland Gilliland of Washington, D. C., noted America humorist and author of the ageless "Off Agin, On Agin, Gone Agin Finnigan."

Finally, the entertainment shifted to the stage, where a corps of dancers, singers, and other artists performed under the direction of Corinne Muer, former Broadway star, who has become chief theatrical agent to the electric refrigeration department. Music was provided by an orchestra lead by Frank Gillen, "the man of 3,000 songs."

Petrie on Prices

DETROIT, Oct. 11—"Our decision to bring out a $112 electric refrigerator as a part of our 1933 Leonard line was a move not entirely to our liking. We believe that this model is worth more and should have been priced higher. We did it to meet a sales situation that exists and which we must face.

"The public evidently expected a model at this price. If this was the price at which they would buy in volume, we determined that our distributors and dealers must have the benefit of this volume, if it could possibly be achieved without sacrifice of Leonard quality."

Not Seeking New Market

This was the statement which was made by R. I. Petrie, general sales manager of the Leonard Refrigerator Co., regarding the new, low-priced Leonard models, at the concern's 52nd annual distributor convention, in progress here toay.

"There's no use in beating around the bush and saying that we are now reaching for a new mass market which has never been touched before," declared Mr. Petrie.

"The market composed of those who can afford electric refrigerators at all prices has not been exploited to any great degree. The saturation point is a long way off. To any person, an electric refrigerator of quality is a good investment. The refrigerator pays for itself over a period of a few years.

"In selling such a refrigerator as the Model L-425 at $112, there is only a small margin of profit at the factory. I may as well be frank about it. To make any money, a big volume of these refrigerators must be sold.

"It is a model which more than meets the situation brought about by the depression. With business apparently starting up out of the valley, it is a question of how long it will be wise for us to sell such a refrigerator at such a low price."

'Oldest Leonard' Spotlighted

The "oldest Leonard," which saw 51 years of continuous service, in the home of 82-year-old Mrs. Mary V. Peyton at Stockton, Calif., held the spotlight at the 52nd annual distributor convention of the Leonard Refrigerator Co. in Detroit, Oct. 11. Examining the box, left to right, are R. G. Nelson, member of the factory sales staff; R. R. Ludington, assistant to the sales manager; Max Romig, assistant advertising manager; R. I. Petrie, sales manager; A. M. Taylor, merchandising director.

Frigidaire, Ltd., In G. M. Division

(Concluded from Page 1, Column 1)

isting Delco-Light distributing outlets, and their previous experience selling a highly specialized product, a good volume of business was quickly built up.

Europe quickly proved to be the most fertile field, and to take advantage of good potential markets soon found to exist in certain countries, branch offices were established in England, France, and Italy, and Frigidaire G.m.b.H. was organized in 1926 in Germany.

While in the United States the general public, prior to the advent of Frigidaire, had some appreciation of the necessity and value of refrigeration, as was evidenced by the widespread use of ice as a means of preserving perishable foodstuffs, this was not true in overseas countries, Frigidaire men found.

For this reason, a vast amount of educational work had to be carried on. In most countries the problem was to "jump the ice age," that is, to progress from no refrigeration to electric refrigeration, according to E. N. Madden.

This required the establishing of new distributing outlets, and new methods of doing business, with the result that such outlets capable of carrying on specialty selling as well as refrigeration enginering work have been developed in every overseas country.

SCHULTZ NAMED ASSISTANT SALES MANAGER

NEW YORK CITY—Walter Schultz, district manager of the Brooklyn branch of Allen-Ingraham, Inc., Westinghouse distributor, recently was appointed assistant to R. C. Hill, metropolitan retail sales manager.

PENDERGRAPH SECOND IN ELECTION CONTEST

(Concluded from Page 1, Column 4)

bany, N. Y., who has been leading the metropolitan division for the past few weeks, polled 15,561 votes last week but could not hold the lead for the position of secretary of the treasury.

Candidate R. Cooper Jr., Chicago G. E. distributor, took the office of secretary of the treasury, and Merriam had to drop back to the position of secretary of commerce.

R. S. Montgomery, the Richmond, Va., aspirant to the presidency, collected 40,125 ballots last week to place him fifth among the leaders instead of eighth, his former position.

The most sensational reverse of fortune last week was suffered by L. W. Driscoll, distributor of Charlotte, N. C., who lost his hold on third place and dropped to ninth.

In San Francisco, L. H. Bennett, polled enough votes to move from nineteenth place to sixteenth, giving him a better chance for the office of secretary of health.

George Patterson, G. E. distributor of St. Petersburg, Fla., polled more than 13,000 votes last week, and advanced nine places.

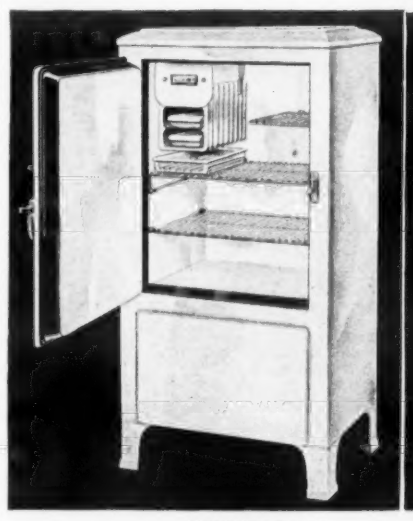
The Washington, D. C., aspirant, Charles L. McCrea, who jumped from thirty-eighth to eleventh place last week dropped to twentieth place this week.

The number of candidates whose votes are far ahead of quota now numbers 22.

FANNY FARMER KITCHEN BUYS KELVINATOR

BOSTON—The Fanny Farmer Kitchen, rendezvous of Boston women who are interested in cooking, has recently been equipped with a Kelvinator S-9.

The New Leonard Electric

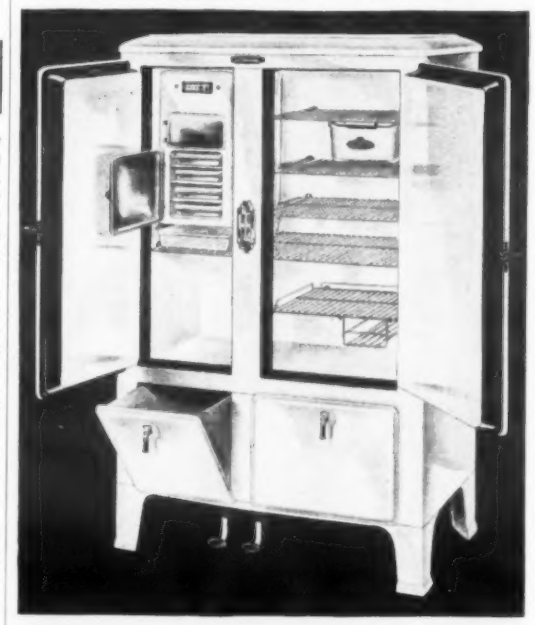


PRICES START AT $112.00 F. O. B. DETROIT

INSTALLATION AND TAX PAID

MODEL L-425

Compact but roomy—4.18 cu. ft. food storage space, 8.37 sq. ft. shelf area; Chill-om-eter with Steady-Kold Defroster (refrigerates while it defrosts), Sanitrays, all-porcelain cooling unit, one-piece porcelain food compartment.



MODEL PL-952

With 9.61 cu. ft. food storage space, 19.07 sq. ft. shelf area; two LEN-A-DORS, Cold Chest, sliding lower shelf and dairy basket, large vegetable crisper, vegetable bin, automatic electric light.

10 beautiful new models (4 all-porcelain) — emphasizing Leonard's slogan: "More For The Buyer's Refrigeration Dollar"

There is both price news and quality news in Leonard's announcement of this finer, more beautiful, more complete line of electric refrigerators.

Introduction of a Leonard Electric at $112 enables Leonard dealers to compete successfully in the low priced field—with a *quality* product. The new Model L-425 has all the beauty of accepted Leonard design, all the sturdiness of Leonard cabinet construction, all of Leonard's traditional refrigeration efficiency at a price every home can afford.

Of the beautiful 10 models in the new line, 4 are all-porcelain—including the luxurious two-door Model PL-952 as illustrated. There is a Leonard Electric for every household refrigeration need, at prices for every budget.

The LEN-A-DOR—"a touch of the toe and the door swings open"—is an exclusive Leonard sales advantage. The standard models also carry many other *new* features that add to convenience, satisfaction and salability.

Leonard—a conspicuous sales success in the season just passed—offers even more outstanding franchise advantages now. Write or wire for details.

LEONARD REFRIGERATOR COMPANY
14256 Plymouth Road, Detroit

LEONARD

ELECTRIC REFRIGERATOR

WRITTEN TO BE READ ON ARRIVAL

Merchandising Section

IN TWO PARTS PART ONE

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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'SAVING MONEY' KEYNOTE OF FALL FRIGIDAIRE PLANS

Newell, Pierce, Nance Conduct Series Of Conferences

DAYTON—H. W. Newell, vice president in charge of sales, F. R. Pierce, sales manager, and J. J. Nance, manager of sales planning division, of Frigidaire Corp. are presenting the company's fall selling theme this week and next to distributors, branch managers, sales managers, and supervisors at a series of seven meetings to be held in Atlanta, Dallas, Tex., Cleveland, Detroit, Boston, Philadelphia, and St. Louis, Mo.

In launching its fall selling program, Frigidaire is providing its dealers and salesmen with a new 24-page booklet entitled, "Saving Money." This publication, tabloid size and in color, is to be used as a demonstration and selling piece. In the event that the salesman is unable to close the sale, the booklet may be left with the prospect as advertising literature.

During the late summer months, Frigidaire salesmen used 750,000 copies of a similar publication, "Most for the Money." This was a 16-page booklet which featured the two-cylinder compressor, and the reasons why a customer should select an electric refrigerator built by an established manufacturer of known reputation.

"We have found such a sales piece much more valuable to the salesman than the old style demonstration book," says Mr. Nance. "In the first place its cost is much less, thus making it practical for the salesman to leave it with the prospect, if he so desires.

"Costing less money to produce, it be-

(Concluded on Page 2, Column 4)

19 DELEGATES RETURN FROM WORLD MEETING

NEW YORK CITY—Headed by Gardner Poole, president of the American Institute of Refrigeration and chairman of the delegation, 19 American delegates have returned from the Sixth International Refrigeration Congress which was held Aug. 28 to Sept. 3 in Buenos Aires, Argentina.

Delegates from more than 30 countries were present at the congress, according to Robert W. Bliss, member of the U. S. consulate in Buenos Aires. Several plenary sessions were held during the congress, but most of the business transacted was done by special committees, of which there were seven.

The first of these seven committees treated with scientific questions; the second with cold storage problems; the third with general applications of refrigeration; the fourth with methods of refrigerated transportation; the fifth with matters which relate to legislation; the sixth with education and propaganda with respect to methods of refrigeration; and the seventh and last with matters relating to statistics and general economy.

Mr. Poole was named head of the committee on refrigerated transportation. During the meeting of these various committees some 200 papers were read dealing with matters relating to refrigeration and cold storage.

Coincident with the congress, the Sociedad Rural Argentina held its International Livestock Exposition in Buenos

Concluded on Page 2, Column 1)

'MONITOR BANK' IS NAME CHOSEN FOR G. E. DEVICE

CLEVELAND—The name "Banclock" will no longer be used in connection with the little white bank with the visible register which is now being used to increase sales of Monitor Top refrigerators, according to M. F. Mahony, manager of the merchandising division of the General Electric refrigeration department.

The name has been changed to "Monitor Bank," and the device will hereafter bear a Monitor Top. "Monitor Bank" was selected by a committee of judges from more than 5,000 letters received in a contest run in The Ballot

(Concluded on Page 2, Column 1)

Green Salesman Gets Two Orders on First Day

ORLANDO, Fla.—Salesman C. H. Slyker of Stonebraker and Perry, General Electric refrigerator dealer here, with no previous refrigerator selling experience, made two sales his first day out.

He canvassed in the morning, "sold" two evening appointments, kept them, and by using the "Monitor bank," G. E. coin device, closed both prospects.

BROWN ADVANCES IN G. E. POLITICAL RACE

CLEVELAND, Oct. 17.—(Special Wire to ELECTRIC REFRIGERATION NEWS)—Voting in the Monitor Top Election Campaign continued heavy last week in all parts of Refrigerania, and there was little change among the leaders in this second race for the presidency.

M. E. Brown, of the A. H. Thompson-Sterling organization in Louisville, Ky., leading the field for vice president made still further inroads upon the lead of Albert Ahrens, Oklahoma City distributor for General Electric, by nearly 5,000 votes.

When tabulations were completed late last night, it was learned that Candidate Brown had received 27,270 ballots as compared to 22,220 of a week ago. Ahrens on the other hand gained only 22,727 votes, whereas a week ago he polled more than 35,000.

Candidate "Hap" Pendergraph from down Nashville way, who pressed into second place two weeks ago, showed an appreciable let-down last week and slipped into third. His weekly total of 16,416 ballots was less than a third of the number turned in when he moved ahead of Brown.

Charles McCrea, Washington, D. C., candidate, continued to gain votes last week, and with a total of 21,823 for that period moved from twenty-first place in the list up to thirteenth.

All distributors with the exception of but a comparative handful are up to quota, and most are ahead. Ahrens, Brown, and Pendergraph already have passed their quotas for the entire campaign.

Word from the leader is to the effect that he will accomplish at least 200 per cent of quota before November 5, the

(Concluded on Page 2, Column 1)

COPELAND EXPORT SALES INCREASE IN SEPTEMBER

DETROIT—Export sales of Copeland electric refrigerators for September increased 73 per cent over those for August and 25 per cent over those for the corresponding month of the previous year, according to H. M. Robins, president of the H. M. Robins Co., here, export factor for Copeland Products, Inc.

"This gain was made in sales to 11 widely separated countries, and would indicate improvement in world conditions in the last 45 days," states Robins.

FRIGIDAIRE CORP. BUYS METERICE COIN DEVICE CO.

Contract For Purchase Of Meters Accepted By Frigidaire

LOS ANGELES—Sale of Meterice of America Co., Ltd., manufacturer of coin-operated meter devices, to the Frigidaire Corp., was consumated here Friday, Oct. 14.

The sale gives the Frigidaire Corp. title to the assets, merchandise, and patents which were formerly the property of Meterice of America Co.

As consideration for the sale the Frigidaire Corp. has agreed to perform the unexecuted portion of a contract between the General Electric Co. and Meterice.

This contract called for the purchase by Meterice of 10,000 meters from the General Electric Co. Under the agreement of sale, the Frigidaire Corp. will purchase these meters in accordance with terms of the original contract, with the exception of a modification of the price of the meters as originally specified.

The Frigidaire Corp. will pay $11 50 per register for the first 3,400 of the registers which are now manufactured

(Concluded on Page 2, Column 5)

ALLISON COMPLETES PACIFIC COAST TOUR

NEW YORK CITY—With the efforts of distributors, dealers, and central station organizations in active cooperation at all central points, electric refrigeration activity in the Pacific Coast territory is now at its peak of the year, according to Dr. G. W. Allison, field manager, Electric Refrigeration Bureau, who has just completed a tour of the coast states.

On Monday, Oct. 3, Dr. Allison addressed a large noon meeting at the Jonathan Club in Los Angeles, at which George Belsey, General Electric distributor of that city, presided.

The following day at San Diego, Calif., he was guest of honor and principal speaker at a luncheon meeting of the Electric Club, and in the evening addressed a general meeting of more than a hundred distributors, dealers,

(Concluded on Page 2, Column 3)

CHICAGO DISTRIBUTOR FOR GURNEY APPOINTED

CHICAGO—The Englewood Electrical Supply Co. here, which specializes in builders supplies and fixtures, has been appointed distributor of the Gurney electric refrigerator for the southern half of the city of Chicago, according to E. G. Vail, president of the Gurney Refrigerator Co.

Distributors Double 1931 Orders on Leonards

DETROIT—Distributors of the Leonard Refrigerator Co., here Oct. 11 and 12 for their fifty-second annual convention, placed orders for twice as many electric refrigerators of the newly introduced line as they did at their meeting last year, declares R. I. Petrie, general sales manager.

As a result of the increased orders, the company will have to revise its manufacturing schedule upwards for the first three months of the new fiscal year.

GAS INDUSTRY PLANS $3,000,000 CAMPAIGN

ATLANTIC CITY, N. J.—A $3,000,000 advertising campaign—that is the means to be employed by the American Gas Association during the next three years in an effort to bolster business for the country's entire gas industry.

This was the announcement made by Conrad N. Lauer, president of Philadelphia Gas Works Co., when he addressed the association's fourteenth annual convention held here Oct. 10-12.

Campbell-Ewald advertising agency, Detroit, will handle the account, according to a report.

Mr. Lauer said that the association's officials have already reached an agreement regarding the campaign's methods and expenditures, and that the entire organization has pledged its support to the plans.

In addition to the $1,000,000 to be spent for advertising by the association during the coming year, as the first third of its three-year program, various individual gas companies will spend approximately $4,500,000 during the next 12 months, Mr. Lauer estimated.

Newspapers, magazines, and other media will be utilized in the campaign, it was stated.

Speaking on the subject of advertising, William H. Hodge, vice president of the Byllesby Engineering and Management Corp. of Chicago, declared that "too many advertising men have planned operations on the myth of the 12-year-old average adult mind. They studied statistics instead of people."

Continuing, he asserted, "The average mind today is probably the most shrewd purchasing mind in the world. It has been duped by hokum, matured with dearly bought experiences, and sharp-

(Concluded on Page 2, Column 5)

GRUNOW CORP. SECURES MANUFACTURING QUARTERS

CHICAGO—A manufacturing plant at 4127 George St. here has been acquired by the new Grunow Corp., headed by W. C. Grunow, former president of Grigsby-Grunow Co. Production of electric refrigerators is expected to be started shortly. Associated with Grunow are Arthur C. Winan, secretary, and S. L. Arneson.

R. E. OLDS BUYS KOLD-HOLD CO.; TO MOVE PLANT

Manufacture Of Brine Systems Planned In Lansing

LANSING, Mich.—R. E. Olds, chairman of the board, Reo Motor Co., exercised an option last week to take control of Kold-Hold Co., Greenville, and plans shortly to start production of the Kold-Hold refrigeration system for refrigerated trucks, display cases, etc.

As explained in the Oct. 5 issue of ELECTRIC REFRIGERATION NEWS, the Kold-Hold system uses a eutectic brine method of storing refrigeration.

Exclusive right to the application of the Kold-Hold system to refrigerated display cases has already been granted to the Grand Rapids Store Equipment Corp., Grand Rapids, Mich.

Negotiations are under way with various insulated truck body manufacturers by which refrigerated trucks will employ the same system, according to W. G. Farnsworth, who represents Mr. Olds in the development.

It is expected that production of the Kold-Hold systems will take place in the former Ryan-Bohn foundry west of Lansing which is owned by the Olds' interests, and in which production equipment was installed last spring for the manufacture of electric refrigerators under the design of H. M. Hvid, a development which was abandoned this past summer.

Mr. Olds last week offered $105,000 for the former plant of the Durant Motor Co., but creditors did not accept.

Associated with Mr. Farnsworth in the Kold-Hold organization are W. G. Finch, inventor of the system; F. J.

(Concluded on Page 2, Column 2)

COMMERCIAL UNITS SHOWN TO DAIRYMEN

DETROIT, Oct. 18.—The Dairy Industries Exposition, largest annual exhibit of industrial and commercial equipment for any one industry that takes place in this country, opened here Monday and will continue through Saturday.

Meetings of various allied groups in the dairy industry are also being held here during the course of the convention. These include the following: International Association of Milk Dealers, the International Association of Ice Cream Manufacturers, the International Association of Dairy and Milk Inspectors, the Dairy Engineers Institute, Refrigerating Machinery Association, the American Dairy Science Association.

More than 250 exhibitors have crowded every inch of the acres of floor space in Detroit's Convention Hall, where the exposition is being held. Many exhibitors are showing new or improved equipment for the manufacture or distribution of dairy products.

Frigidaire, General Electric, Kelvinator, Servel, Universal Cooler, and Electrolux are the well-known manufacturers of domestic and small commercial refrigeration equipment who are exhibiting at the exposition.

Manufacturers of industrial refrigerating machinery who are exhibiting include the following: Cherry-Burrell Corp., Creamery Package Mfg. Co., The Frick Co., International Carbonic Engineering Co., York Ice Machinery Corp., and the Vilter Mfg. Co.

Other exhibitors with products of in-

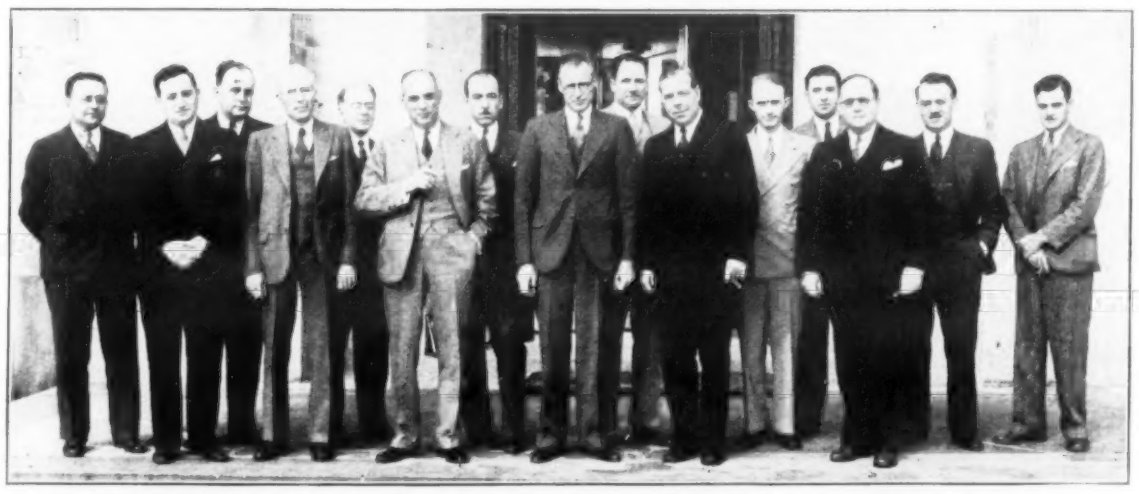
(Concluded on Page 2, Column 4)

PEARSON TO HEAD YORK COMMERCIAL SALES STAFF

YORK, Pa.—C. A. Pearson, formerly eastern sales manager and manager of the New York City office of the General Refrigeration Co., Beloit, Wis., has recently been appointed national supervisor of commercial sales for the York Ice Machinery Corp., with headquarters at the home office here.

Mr. Pearson's experience and association with the refrigeration industry dates back to 1919 when he was in the employ of the Isko Co., Chicago. A few years later he became sales engineer, then assistant sales manager, and later sales manager for the General Refrigeration Co. of Beloit, Wis. In 1927 he was made eastern sales manager.

Petrie's Pow-Wow Before Stumping Nation for Leonard



Following the fifty-second annual distributor convention of the Leonard Refrigerator Co., held Oct. 11 and 12 in Detroit, the company's field men went into a huddle with factory officials. In the group, left to right, are George B. Gray, Texas and Louisiana; Bernard J. Roe, Philadelphia; S. D. Camper, Detroit; G. E. Rogo, New York and Boston; A. M. Taylor, merchandising director; H. E. Brasier, Denver; R. R. Ludington, factory; H. K. Lyons, factory; Lee Stratton, Cincinnati; R. I. Petrie, sales manager; B. E. White, Florida; Max H. Romig, assistant advertising manager; J. B. Nicolson, West Coast; H. F. MacGrath, Chicago, and R. G. Nelson, factory sales staff.

WOMEN JURORS VOTE ON QUALITY AT KERN'S

By Margaret M. Thompson

DETROIT—In order to stress the quality of its merchandise rather than the price, the Ernst Kern Co., department store here, has asked a jury of 12 prominent women, who represent an accurate cross-section of the buying public, to judge its goods and to vouch for the quality in a series of newspaper advertisements during the month of October.

The women chosen for the jury are members of various city organizations and their judgment is supposed to represent the collective opinions of the women in their particular groups. They are asked to come to the store once or twice a week to view the new merchandise and judge it.

Questions of the following nature were asked the jury by the store: "Is the merchandise good style? Is the quality reliable? Is the article timely—needed now? Is it in good taste? Would I wear it, or use it, myself? Are assortments and size ranges complete? Is the price the lowest consistent with dependable quality?"

"Women are 'quality conscious' this year, more than ever before. They know the value of merchandise, and what they should receive for their money," states Mrs. Vera Sharpe, advertising department, Ernst Kern Co.

"Through this jury we have been able to determine the consumers' demand; and having determined it, to offer to buyers the desired merchandise with not only our reputation behind it, but also the approval of friends and business associates who comprise the jury."

The women who judged the merchandise and their respective organizations are as follows. Mrs. M. McKinnon, Federation of Women's Clubs, housewife; Mrs. F. J. Weber, Goodwill Industries—Williams House, housewife; Mrs. C. E. Sullivan, Catholic Study Club and League of Catholic Women; Mrs. J. Edgar Finley, Civic Pride Association, housewife.

Mrs. J. R. McColl, 20th Century Club, housewife; Mrs. G. R. Wonnacott, Women's Auxiliary Typographical Union, housewife; Miss R. Lichtenberg, Advertising Club, business woman; Mrs. Moritz Kahn, Council of Jewish Women, housewife; Miss J. Blanchard, College Club, business woman; Miss Marie Rasey, school teacher; Miss Louise Grace, Zonta Club, business woman; and Mrs. M. H. Lee, business woman.

'MONITOR BANK' IS NAME CHOSEN FOR G. E. DEVICE

(Concluded from Page 1, Column 1)

Box, official Monitor Top Election Campaign newspaper.

The winning suggestion was submitted by R. F. Davey, retail sales manager of the Cushman Refrigeration Co., Cleveland, and he was awarded 100 Monitors, payable in United States currency at the "Bank of Refrigerania."

Second prize, 50 Monitors, was awarded to C. W. Sundin, salesman for Judson C. Burns, G. E. refrigerator distributor in Philadelphia, and third prize went to Lucile Martin of the George Belsey Co., Ltd., distributor in Los Angeles. Miss Martin will receive 30 Monitors.

DELEGATES RETURN FROM REFRIGERATION CONGRESS

(Concluded from Page 1, Column 1)

Aires and the officials of the congress took advantage of this situation to provide an elaborate stand in the grounds of the exposition which showed the various methods of cold storage.

The exhibition was divided into sections as follows: first, freezing materials; second, methods of application; third, transport methods; and fourth, information and propaganda. In addition, a parade was arranged which showed the various methods of refrigeration and which acted in conjunction with the inauguration of the Livestock Exposition on Sept. 4, 1932.

At the close of the sessions, delegates made visits to English and American packing plants in the city of La Plata.

BROWN MAKES ADVANCE IN G. E. POLITICAL RACE

(Concluded from Page 1, Column 2)

date of the closing of the polls.

Through the political grapevine of the nation have come whisperings about the doings of two distributors with whom the leading seven candidates have not reckoned.

These "dark horses" are Frank Wolf in Buffalo, and "Bill" Thompson in Boston. Both, it has been learned, have closed large deals for General Electric refrigerator installations which will bring them thousands of votes when deliveries are made.

Determined to see Albert Ahrens occupy the president's chair, clerical employes, office boys, truck drivers, and all nonselling workers have begun a selling campaign. The southwestern district has never had a winner in a campaign before.

N. Y. Salesmen Go To Atlantic City

NEW YORK CITY—Leaving Friday noon and returning to work Tuesday morning, 250 salesmen of the New York Frigidaire Sales Corp. and their wives spent a week-end at Atlantic City, N. J., recently, celebrating the conclusion of the organization's annual July, August, and September sales drive.

Those who qualified for the trip were salesmen who sold 100 per cent or better of their quota for the period. The party left New York City on a special train over the Pennsylvania railroad, returning the same way.

During the stay at Atlantic City the party was quartered at the Ambassador hotel.

The high spot of the outing was a professional revue and cabaret entertainment Sunday evening. D. R. Lawrence, sales planning manager for New York City, was in charge of arrangements.

C. M. Eakin, general manager of Frigidaire's New York sales operations who missed last year's excursion to Bermuda, caught the Atlantic City train with a few seconds to spare.

R. E. OLDS TAKES CONTROL ON KOLD-HOLD COMPANY

(Concluded from Page 1, Column 5)

Heideman, vice president in charge of engineering; F. B. Perrigo, C.P.A. of Grand Rapids who assumes secretarial affairs of the company; and H. J. Burman, formerly of Frigidaire and Copeland, who will be service manager. Offices are maintained in the Capital Bank Tower, Lansing.

Executives of the firm are in Detroit this week where a refrigerated display case and a 1½-ton Reo refrigerated truck using Kold-Hold refrigeration are being displayed at the Dairy Industries Exposition.

Stevens, Palmer, and Stevens of Grand Rapids have been named as advertising agency to handle the Kold-Hold account.

ALLISON COMPLETES PACIFIC COAST TOUR

(Concluded from Page 1, Column 3)

and central station men. A. E. Halloway, commercial superintendent of the San Diego Gas & Electric Co., was chairman of the evening meeting.

Returning to Los Angeles on Wednesday, Dr. Allison attended a conference of 25 distributors and manufacturers at which numerous local sales problems were discussed.

On Thursday, Oct. 6, Dr. Allison addressed a meeting of the Pacific Coast Electrical Association at its convention in San Francisco. In the afternoon of the same day he was the principal speaker at a meeting of the Electric Refrigeration Bureau of Northern California. Harry Carroll, manager of electrical sales of the Pacific Gas & Electric Co., and chairman of the bureau, presided.

The following morning he addressed a group representing the ice industry. Two meetings were held in Portland, Ore., on Monday, Oct. 10, Dr. Allison speaking at a luncheon of the Electric Club, and later in the afternoon at a meeting of dealers and distributors.

In Seattle there was a meeting of dealers and distributors the following day, and on Oct. 12, in Spokane, Wash., in addition to the scheduled refrigeration meeting, Dr. Allison spoke at a noon meeting of the Advertising Club.

An evening session was held in Boise, Idaho, on Oct. 13, and on Saturday, Oct. 15, one of the largest meetings of the entire trip was scheduled for Salt Lake City, Utah.

Other meetings were held in Denver, Oct. 17, and Omaha, Oct. 18; and will be held in Aurora, Ill., Oct. 19; Erie, Pa., Oct. 20; and Cincinnati, Oct. 21. Following a week-end in New York, he will go to Rutland, Vt., for a state-wide meeting, on Oct. 26.

HARDWARE GROUP TO MEET IN BALTIMORE, FEB. 14

PHILADELPHIA—The annual convention and exhibition of the Pennsylvania and Atlantic Seaboard Hardware Association will be held Feb. 14 to 17.

Frigidaire Starts Fall Campaign

(Concluded from Page 1, Column 1)

comes a relatively simple matter to change the copy to meet the demands of a changing market, or even the special requirements of a short selling period.

"Thus, 'Saving Money' was prepared with the single idea of helping salesmen get business during the fall and winter selling season. Having this one purpose in mind, all the copy and illustrations are right in keeping with the sales arguments which we have found most productive at such a period," states Nance.

The basic idea back of the new sales booklet is that the economies made possible by the electric refrigerator will soon pay for it. The booklet shows that with the prevailing lower prices for foods, Frigidaire users report an average savings of $7.70 a month.

COMMERCIAL MACHINES SHOWN AT DAIRY EXHIBIT

(Continued from Page 1, Column 5)

terest to the electric refrigeration industry are: Allegheny Steel Co., Aluminum Co. of America, Anheuser-Busch, Inc., Armstrong Cork & Insulation Co., Bristol Co., Chester Dairy Supply Co., Continental-Divco Co., Dry-Ice Corp., Eskimo Pie Corp., Fitz Gibbon & Crisp, Inc., Foremost Refrigeration, Inc., Grand Rapids Cabinet Co.

Hercules Products, Inc., International Nickel Co., E. A. Kaestner Co., Liquid Carbonic Corp., Mathieson Alkali Works, Inc., Michigan Alkali Co., Mitchell & Smith, Mundet Cork Corp., C. Nelson Mfg. Co., C. J. Tagliabue Mfg. Co., Taylor Instrument Co., Emery Thompson Machinery & Supply Co., United Cork Co.

GENERAL ELECTRIC DEALER OPENS NEW STORE

PORTLAND, Ore.—Meier & Frank Co., General Electric dealer in this city, announce the opening of a new store.

GAS INDUSTRY PLANS $3,000,000 CAMPAIGN

(Concluded from Page 1, Column)

ened by adversity. It is lying in ait to make monkeys out of advertising people, who believe that the sure-hot theme for selling anything is that amazing new discovery, sex."

That legislation intended to prohibit sales of appliances by utility companies is to be deplored was the statement of Clifford E. Paige, vice president of the Brooklyn Union Gas Co., in another convention address.

"In Kansas and Oklahoma, where such bills have been passed, no great amount of business, formerly done by the utilities, has been transferred to local dealers," he said. "The only effect of this legislation was to stifle merchandising."

R. W. Gallagher of Cleveland, president of the association, decried the growing demand among the "uninformed" for a reduction in utility rates.

He said: "Arguments for lower rates, in proportion to costs of living and doing business, are easily answered. Utility rates were never as high proportionately as other expenses of living and conducting business."

At the close of the convention, Arthur Hewitt, vice president of the Consumers Gas Co. of Toronto, was elected president of the association.

Howard Bruce, chairman of the board of Bartlett Hayward Co., Baltimore; and N. C. McGowan, president of the United Gas Public Service Co., Houston, Tex., vice presidents; and William J. Welsh, president of the New York and Richmond Gas Co., Staten Island, N. Y., treasurer.

No exhibit of gas appliances was held in connection with the convention this year, as the manufacturers' division of the organization voted for a temporary suspension of that feature.

Chicago was selected for the 1933 convention of the association.

ELECTROLUX, FARADAY REPRESENTED

ATLANTIC CITY, N. J.—Representing Electrolux Refrigerator Sales, Inc., at the American Gas Association convention were F. E. Sellman, vice president; B. O. Brown, assistant sales manager; and William Reynolds, advertising manager—all of the company's New York office.

R. F. Callaway, vice president in charge of sales; H. H. Wampler, assistant general sales manager; and O. E. Wolf, E. C. Hill, and H. F. Patterson of the general sales staff, Faraday Refrigerator Corp., attended the convention.

How To Operate A Distributorship

As Told By J. Graham Hambly, Leonard Los Angeles Distributor

By Elston D. Herron

LOS ANGELES—Before it makes any move in the conduct of its wholesale refrigeration business, the company of Graham Hambly & Son, Leonard distributor here, stops to ask itself two questions: "Are we being conservative?" and "Will this maintain harmony in our dealer organization?"

For when either conservatism or harmony is lost, there passes from any business—and certainly from refrigerator wholesaling—much of the stability necessary for successful operation, says J. Graham Hambly, senior partner and president of Graham Hambly & Son.

"In securing and serving dealers, we bear in mind constantly that we would rather have a few strong dealers than many weak ones," he says. "We try to be conservative.

Ask Established Dealers

"And before we make any prospective Leonard dealership a part of our organization, we invariably consult with all of our established dealers who might in any way be affected by the new appointment. If one of our dealers is opposed to the appointment for any reason, the prospect doesn't get the job. This makes for harmony, and harmony pays."

Hambly & Son's territory includes Los Angeles and nine surrounding counties. The company has been a Leonard wholesaler for 11 years—nine as a Leonard ice box jobber, and two as a Leonard electric wholesaler. It also wholesales heating stoves, ranges, and water heaters.

In the company's territory are 47 Leonard refrigerator dealers. Fifteen of these dealers are in Los Angeles. All but two of the Los Angeles dealerships are large stores handling refrigerator sales through special departments. Two are specialty shops.

Dealers in Los Angeles and other key cities in the area are contacted weekly by a Hambly wholesale salesman. All other dealers in the territory are visited at least once every three weeks, according to Mr. Hambly.

Have Two Rules

The company employs three wholesale salesmen who sell all products handled by the Hambly organization. For these men, two rules have been laid down: They must confine their efforts on each call to the sale of one appliance only. They are forbidden to mention any competing make of appliance.

"A salesman can do a better job if he concentrates on the sale of just one product on each call," says Mr. Hambly. "If he discusses several products, his presentation of each loses its effectiveness.

"And under no circumstance is he permitted to mention a competitor. When a salesman starts discussing competition, complications result. So when a dealer asks about another make of appliance, our salesman says, 'I prefer that you get your information elsewhere'."

Little difficulty arises from the fact that Hambly salesmen sell both refrigerators and heating equipment, says Mr. Hambly, because they devote most of their time to refrigerator sales in the spring and summer and to heating appliance sales in the fall and winter.

Although Los Angeles department stores handling Leonard refrigerators maintain staffs of salesmen for door-to-door selling, they depend chiefly upon various kinds of advertising to secure Leonard buyers, according to the wholesaler.

"Los Angeles is a growing city," he explains. "Many of its people have lived here just a short while. They know little about its stores and shops; they depend on advertising to tell them where to buy. So our Leonard dealers advertise heavily, and rely upon the resultant store traffic for most of their buyers."

Believe in Advertising

Hambly & Son is sold on the value of advertising. Its salesmen encourage dealers to spend as much as possible on this type of sales promotion. The wholesale company itself does considerable advertising of Leonard electrics—the factory bearing one-half of the cost.

The wholesaler pays one-half of the cost of all advertising done by its dealers. To the cost of each unit purchased by a dealer from the wholesaler, the latter adds several dollars for advertising expenses. This amount varies proportionately with the model of refrigerator purchased.

Dealer is then credited on the Hambly books with this amount, *plus* a similar amount to cover the wholesaler's share of the dealer advertising. At the end of each month, the dealer sends his four weeks' advertising bill to the wholesaler, and if the former has sufficient credit on the jobber's books to cover the total bill for the month, a check for the full amount is sent to him.

Builds Advertising Fund

In this way, the dealer builds up, with each purchase from his wholesaler, a fund sufficient for his month's advertising bill. If the number of refrigerators purchased is unusually large, he automatically saves a fund sufficient to pay for a larger volume of advertising to speed sales of his stock. If his purchases are small, the fund will be small.

Hambly & Son is also an advocate of direct-mail advertising. It supplies its dealers with mailing materials at cost.

"We urge our dealers to do a lot of direct-mail advertising," says Mr. Hambly. "In fact, in our visits to dealers, we spend more time talking sales promotion literature to them than we do talking orders. If we can make them use large quantities of sales promotion literature, orders will take care of themselves."

Each spring, the wholesaler holds a series of schools for dealer service men. Similar schools are held at other times, if there is a need for them, says Mr. Hambly. Twice a year, meetings for sales instruction are held for dealers and their salesmen.

An institution with this wholesale organization is its fortnightly "open house." Twice a month throughout the entire year, Hambly & Son keeps its sales room open at night, and its entire sales and service forces remain to answer questions and discuss problems with dealers who come in from the field.

Mr. Hambly says that these formal schools, sometimes large, sometimes small, are an important factor in keeping the dealer organization abreast with new developments in the fields of merchandising and service.

No Price-Slashing

The wholesaler is strict with its dealers on one point—that of retail prices. Says Mr. Hambly: "We won't tolerate price-lashing competition within our own ranks. If we learn that one of our dealers has cut prices, we oust him from our organization—no matter how good a dealer he has been. It's the only way to give the others an even chance at making a fair profit."

How is business in the West?

Mr. Hambley says this:

"Business in general is better in the West than in the East. But the household refrigerator business has more problems on the west coast than in eastern and middle-western parts of the country. This is due to the large number of local refrigerator manufacturers and assemblers who concentrate on the California market and make no attempt at national distribution.

Business Improving

"However, competition has driven nearly a half of these local manufacturers out of business, with the result that things are looking up for merchandisers of nationally distributed refrigerators."

Low-priced units have met with considerably public disfavor, according to Mr. Hambly, who says that investment builders have supplied the only good market for these low-priced refrigerators.

That department stores and other types of large retail operators in the Southwest are the best outlets for electric refrigerators is another of the wholesaler's statements. Small specialty outlets are not doing a satisfactory business, he says.

FRIGIDAIRE CORP. BUYS METERICE CO. OF AMERICA

(Concluded from Page 1, Column 3)

and remain on hand, and $8.50 for 6,500 of the registers which have been ordered but not yet manufactured.

The Frigidaire Corp. will receive the full benefit of all of the provisions of the original contract, including the warranties of or rights conferred by the General Electric Co. for the protection against liability under any suit for infringement of any patent of the United States on account of the use and sale of registers sold under contract by the General Electric Co.

The Meterice organization was originally formed by Hugh R. Smith of Los Angeles, who incorporated his company as Meterice of America, Ltd., in the early part of 1931. The Platt Music Co. of Los Angeles was the first firm to come out with a selling plan which embodied the Meterice coin-meter. This was in April, 1931.

The May Co. of Los Angeles, Famous-Barr Co. of St. Louis, and Crowley-Milners in Detroit were other well-known department stores who soon started to use the Meterice plan in selling electric refrigerators.

Tom May, vice president of the May Co., nationally known department store organization, became financially interested in the organization and was named president in August, 1931.

In September, 1931, the first sale of a Frigidaire on the Meterice plan was made in San Antonio, Tex. Other Frigidaire dealers and distributors were soon making sales on the Meterice plan.

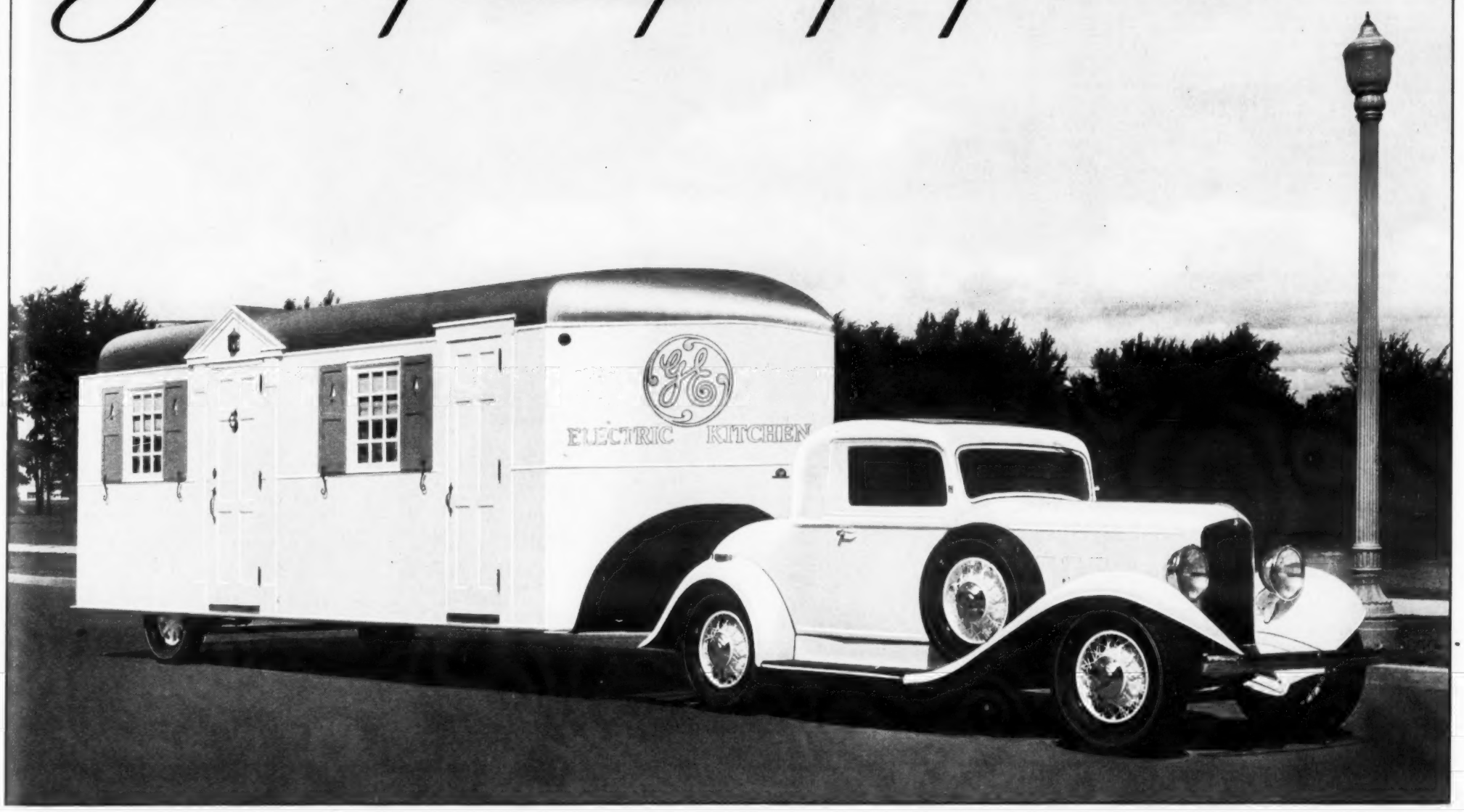
In October, 1931, Frigidaire was given the exclusive right to the use of the coin-meter operation under the name of "Meterice," the original grant being for 60 days, after which time it was renewed.

Since that time, Frigidaire has opened up a number of successful department store operations in which the Meterice plan is used.

LOUISVILLE DEALER FOR FRIGIDAIRE NAMED

LOUISVILLE, Ky.—The William H. Day Co. has been appointed main dealer for Frigidaire in Louisville, Jefferson, Oldham and Bullitt counties in Kentucky, and Clark, Floyd and Harrison counties in Indiana.

Goes right to your prospects' door!



GENERAL ELECTRIC KITCHEN ...*on Wheels!*

It gets attention—and sales—for G-E retailers

THE complete General Electric Kitchen has been proved to be a tremendous sales force for G-E Refrigerators. It has now been *placed on wheels,* and its powerful sales support made available to G-E retailers. The G-E Kitchen Coach not only locates and closes prospects for G-E Refrigerators but also opens new avenues of profit for the G-E retailer. A fleet of G-E Kitchen Coaches is now in the field, with more under construction.

Here is just another evidence of the *extra values* in the General Electric franchise. G-E retailers are given more than a good product and a liberal schedule of discounts. They have definite, constructive support in building a permanently profitable business for themselves.

The G-E retailer has a *complete line* of refrigerators to offer, including both the sealed-in-steel Monitor Top and the low-priced, conventional, flat-top G-E Junior.

For those prospective purchasers to whom original low price is most important, the G-E Junior is today's outstanding value in conventional type refrigerators.

With those to whom quality exerts the stronger appeal, the famously dependable Monitor Top Refrigerator is recognized as the standard of refrigeration excellence. Today, one out of three electric refrigerators in use is a General Electric Monitor Top. Its five year performance record is unparalleled, and General Electric guarantees its mechanism with a 4-Year Service Plan—three years beyond the standard one-year warranty.

General Electric Company, Electric Refrigeration Department, Section DF102, Hanna Building, 1400 Euclid Ave., Cleveland, Ohio

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

ONE OUT OF THREE IS A GENERAL ELECTRIC

News of Companion Lines of Electric Appliances

Majestic Radio Sales Plan Tells How To Get Profitable Fall Business

CHICAGO—To convince Majestic radio dealers that they can do a profitable business this fall and winter, then to show them how to get that business—these are the purposes of a new set of sales promotion materials recently issued by Grigsby-Grunow Co., Majestic radio and refrigerator manufacturer.

The portfolio of booklets and folders contains detailed instructions and suggestions for every unit of the company's radio sales organization in operating a Preferred Dealer Plan of sales promotion—companion project to the Master Dealer Plan (reviewed in Sept. 21 issue of ELECTRIC REFRIGERATION NEWS) now in operation in the Majestic refrigerator sales organization.

Preferred Dealer Plan provides for concentration of sales promotional effort, during the remainder of the year, on Majestic radio dealers who are situated in relatively prosperous, progressive communities, and those who have established a record for stability and aggressiveness in the past.

Features of Campaign

Features of the campaign are introduction of new models; a $100,000 find-the-oldest-radio contest (Sept. 28 issue of ELECTRIC REFRIGERATION NEWS); a policy of increased trade-in allowances; use of Majestic Radio Herald, a tabloid of Majestic radio news for circulation among dealers' customers and prospects; factory advertising in *Saturday Evening Post*; and several new advertising pieces and store-brighteners for dealers.

Much material for the campaign was prepared by Al Johnson, Majestic radio sales promotion manager, assisted by Clifford DeWees, new assistant advertising manager, under the direction of Earl L. Hadley, advertising manager.

Campaign Not as Elaborate

While contents of this new radio portfolio are not as elaborate as those of the refrigerator Master Dealer Plan packet, there are—particularly in the booklet for dealers—not a few gems of practicality, intended for dealers who "are waiting for business to come to them."

"Successful Selling," booklet given to Preferred Dealers as soon as they have been selected and approved as such, gets down immediately to the business of convincing dealers that there is a market for radios.

It points out that of 30,000,000 homes in the U. S., only 16,000,000 were equipped with radios in 1931, and that in 10,300,000 homes, the radios installed are more than three years old, making a theoretical market of 24,300,000 homes for new radios.

'People Are Not Poor'

Probably the most forceful presentation in the entire dealer brief is that which attempts to show dealers, with facts, that "many people are not poor." It says this:

"When people are 'broke' they don't buy automobiles. Yet 655,764 of them were bought between Jan. 1 and June 30, 1932. Ford sold 5,000 more 8-cylinder cars in June—*at an increased price*—than he sold 4's. People don't spend more money for more cylinders when they are pinched for money.

"Many people have money to spend for what they want. In Chicago, one night in July, 45,000 people paid $3, or less, for a seat at a boxing contest of amateur fighters. The sponsors expected about 40,000, and sponsors are usually optimistic.

"The public has money to spend for what it wants—and one of the things it wants most is a lot for its money. Thousands of people bought electric refrigerators this summer. Their mothers and grandmothers got along all right with ice boxes. An electric refrigerator wasn't an absolute necessity."

'Dressing Up' Dealer's Store

Then come suggestions for "dressing up" the dealer's store during the campaign. The booklet urges that the dealer "not give the public's mind indigestion" by placing too many things in his display window, and that he place at least one new Majestic in the window.

Each model displayed in the store should be brightened up with descriptive placards, etc.; the dealer should carry an adequate stock; all models should be ready for immediate demonstration, the book advises.

"Start a campaign of newspaper advertising, get a letter out to every prospect on your list, bring your mailing list up to date, help your salesman plan his activities, use a few radio broadcasts if possible."

Next section of the manual is devoted to illustration and description of the eight models composing the new Majestic radio line.

Dealers are told that they should have, in most instances, two outside salesmen working during most of the campaign (Aug. 29 to Dec. 31). During the first two weeks, only one salesman will be needed, the brief estimates, and he should spend only three-fourths of his time selling radios, if he is to earn a living wage during that two-week period.

The third week, after publication of the first of several Majestic advertisements in the *Saturday Evening Post* (Sept. 17 issue), the salesman should devote all of his working hours to selling Majestic, and should make three sales averaging $85 each—bringing his weekly earnings to $25.50.

A second salesman should be employed at the start of the fourth week, the manual advises, with salesman No. 1 assisting him in training and sale-closing. For his help to the new man, the first salesman should receive a 2 per cent bonus on all sales made by the newcomer.

Increasing Sales

From the fourth week to the close of the campaign, sales should increase steadily, to give the first salesman an average weekly income of $47.22 for the entire drive, and the second man an average weekly income of $35.96.

Figuring that the two salesmen will make 144 sales during the campaign, the manual estimates that each dealer will make $4,142.88 during the period, or an average of $230.16 per week.

Of training the new salesman, the booklet says: "For the first couple of days he should be kept in the store where you, or your trained man, can give him all the facts he needs concerning the line, its features, prices, terms, etc. He should read all available literature.

"His first calls should be made with the trained salesman, and he should keep his ears open and his mouth shut. Toward the end of the first week . . . he should be permitted to interview a couple of prospects, while the trained man stands by ready to help out if needed. After a trial period, he may be sent out on his own."

Sell Higher-Priced Models

Salesmen should always try to sell higher-priced models, the book insists. On this point it says, "Thousands of people each year buy articles at prices far less than they confidently expect to pay, all because some salesman made no effort to sell them something better, at a price nearer their expectations. The customer who pays the least is usually the most critical."

Last section explains the dealer's part in promoting features of the campaign—how to capitalize on the increased trade-in allowance authorized by the factory on one model, how to secure and register names in the national and community searches for the oldest radios, and how to buy and use the various dealer helps being offered through distributors.

Sample Advertisements

In each portfolio are five sheets of advertisements available in mat and stereo form to all dealers for use in local newspaper advertising, a number of small handout folders, and a packet of registration blanks for the oldest radio search.

Second of the four major booklets in the portfolio is one which outlines duties of distributors in the campaign.

With this brief, each Majestic radio distributor receives a supplement which analyzes sales possibilities in his entire territory. Two maps of the distributor's territory are a part of this supplement.

One map pictures, by counties, the present radio-ownership saturation, and enables easy isolation of the best replacement market. The other differentiates Preferred Dealer territory from that of Class A dealers (dealers with poor sales records, due to bad location or lack of aggressiveness).

Preferred Territories

Preferred Dealer territory is divided into sections where concentrated sales effort is possible, and where diffused efforts seem to be needed. Recommended number of Preferred Dealers and retail salesmen is also given in this section.

Buying power percentage of each county is also furnished the distributor. This is the county's direct ratio to the known buying power of the distributor's entire territory. Only those cities are listed which have a buying power sufficient to warrant a Preferred Dealer appointment.

A check sheet for use by the distributor in keeping records of his salesmen's operations is another part of the supplement.

Following the booklet's explanation for use of the territorial analysis supplement comes a section outlining procedure which should be followed by the distributor in conducting the campaign in his territory. He is urged to meet with all dealers before the drive starts.

Next is a brief outline of the dealer plan book's contents, followed by a discussion of the distributor's part in the oldest-radio contest. The brief insists that each distributor offer some reward to the dealer in his territory finding the oldest radio.

Last section emphasizes that all distributors should assign some salesmen to the task of selling units to Class A dealers, even though the sales be small. Although these dealers may sell only a few units each, their total sales are profitable to the distributor, the booklet points out.

Third of the four booklets is one for distributor salesmen.

Its first pages tell the distributor salesman to present each dealer, personally, with his manual and other materials for the fall-and-winter drive, and to make sure that every dealer understands plans for the campaign.

As to the distributor salesman's appointment of dealers to the "preferred" class, the manual emphasizes that no dealer should be so designated unless he is situated in a community of sufficient size and sales possibilities to warrant operation of at least one salesman exclusively on radio, with assurance that the salesman can make enough money to keep him on the job.

Other Instructions

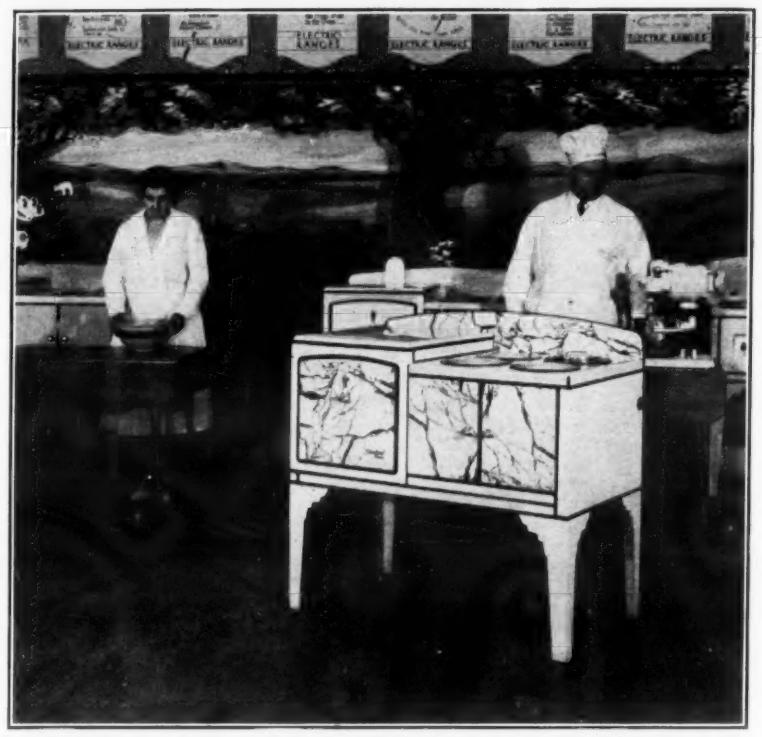
Among other instructions to distributor salesmen are these: "Know your territory before you go into it. Line up at least one salesman, and get him ready to start canvassing before you leave each dealer. Make sure that the dealer understands all details of the campaign.

"Check the dealer's stock and the location of his floor display. Put emphasis on the sale of higher-priced models. Report to your distributor on the condition of affairs in each dealer's territory. Make an aggressive follow-through. Plan call-backs systematically."

As regards his work among "Class A dealers" (dealers in poor sales territories or those with only fair sales records), the distributor salesman is told that he should contact these individuals in the early days of the campaign, sell them as much equipment as possible, urge them to use the oldest-radio contest as a prospect-getter, and then devote the remainder of the campaign period to work among preferred dealers.

Fourth booklet in the portfolio is a technical data book for salesmen. "Know Majestic" is its title. It is divided into two principal parts—the first dealing with manufacturing facilities and the financial status of Grigsby-Grunow Co., the second with simplified discussions of Majestic radio features.

Philadelphia Range Exhibit



Standard Electric ranges were among those demonstrated at the recent Philadelphia show. The range displays tied in with the fall campaign.

EASTERN UTILITY MAKES 106 RANGE SALES

SALISBURY, Md.—The Eastern Shore Public Service Co. sold 106 electric ranges in the "Fame" sales campaign just completed by this utility organization.

A quota of 50 ranges had been set for the two months' campaign. The campaign was named in honor of Frank A. Mitchell, vice president of the Eastern Shore Public Service Co., the name being taken from his initials plus the letter "E" which stood for enthusiasm.

Rivalry between the various territorial divisions of the utility became so intense that in the final stages of the campaign prospects were called out of bed, taken to a store, and sold a few hours before the campaign deadline was reached.

EUREKA TO BEGIN FULL PRODUCTION ON NOV. 1

DETROIT—With more orders already on hand than can be filled in two months of full production, the Eureka Vacuum Cleaner Co. will resume full production Nov. 1, Fred Wardell, president, has announced.

After having been completely shut down for more than a year the company has begun to call back its old employes, and more than 600 will be back at work in less than three weeks, Wardell states.

"Through the last year we have been filling orders out of stock," states Mr. Wardell. Suddenly, about last Sept. 1, orders began to increase. Actual sales during September increased 32 per cent over August.

"We had exhausted our inventories and we were forced to reopen. We had to place orders for parts and materials.

"Those of our departments which have already reopened are now operating 10 hours a day, seven days a week."

PERMUTIT SOFTENER SALES INCREASE IN SEPTEMBER

NEW YORK CITY—Sales of Permutit zeolite water softeners during the month of September exceeded sales totals for any month during the past two years, according to O. P. Harris, manager of domestic sales for the Permutit Co.

Harris attributes the growth of sales to the addition of more than 100 new dealers since the first of the year, a lowering of prices, and new and improved models.

New models have softener shells built of welded steel, galvanized inside and out by hot dipping, and finished in blue duco.

The operations are controlled by a single Permutit rotary disk valve, turned by a 9-in. control wheel, mounted on the top of the softener. Both valve and wheel are made of a highly polished white alloy, resistant to corrosion by brine or water.

The brine ejector is integral with the valve and the piping has been simplified.

OWNER OF REFRIGERATOR IS BEST RANGE PROSPECT

CHICAGO—Sales executives of the Edison General Electric Appliance Co. announced today that some of the most valuable prospects for the sale of electric ranges have been discovered among the people in all parts of the country who purchased electric refrigerators from two to three years ago.

At that time thousands of G. E. refrigerators were sold on time payment plans, which would mature at the end of two years or 30 months.

These time payment plans have now matured and the small payments which have been made each month towards the purchase of an electric refrigerator are now being placed back in the family budget where they are available to be used towards the purchase of a range.

Actual names and addresses of prospects of the people who have just finished the payments of the G. E. refrigerator are already in the files of the utility companies and dealers.

HOTPOINT ANNOUNCES KITCHENETTE MODEL

CHICAGO—A new addition to the G. E. Hotpoint line of electric ranges has just been announced by the range sales division of the Edison General Electric Appliance Co.

This new model, specially designed for use in apartment house kitchenettes, will be known as the GE-Hotpoint kitchenette electric range—model RA-150.

According to J. R. Poteat of the G. E. Hotpoint range sales department, an extensive survey indicated that there is a potential market of considerable size for an electric range designed specifically for use in the modern one-, two-, or three-room apartment.

To meet properly the requirements as shown by the survey, it was necessary to design a range to occupy a minimum of space, so it could be combined with other kitchen utilities into a compact whole, with sufficient capacity to serve satisfactorily, yet having a minimum connected load.

The range that has been developed to meet these qualifications has a total connected load of 3,600 watts, and will perform practically every cooking operation that a larger G. E. Hotpoint range can do, with equal speed and satisfaction, according to Poteat.

Overall dimensions are 17¾ in. high, 24½ in. wide, 19½ in. deep. The range has two 1,200-watt hi-speed Calrod surface units. Open coil units (1,000 watts) may be substituted if desired.

The oven interior is 12x14x14 in., and contains a single 1,200-watt open coil type unit. An automatic maintained temperature control keeps the oven temperature at 450° F. for most making and roasting operations.

Lower temperatures may be obtained by using medium and low heats on the oven switch.

A temperature indicator in the door is a guide to the oven temperature. No provision is made for time control.

Model RA-150 is finished in full white porcelain enamel with the exception of the oven door frame and oven front which are finished in gray enamel; angle iron frame is finished in baked gray glyptal enamel. Door handle and catch are finished in chromeplate.

The range is available with either right- or left-hand oven.

QUIET MAY OIL BURNERS ORDERED FOR VATICAN CITY

ROME, Italy—As part of a program to restore many famous buildings in the Vatican City as well as the rebuilding of the Alban villa, the Papal summer court and residence outside of Rome, Pope Pius XI has ordered the installation of Quiet May oil burners in practically all of the buildings of the Vatican City.

Many of these burners have already heated the Vatican Government Palace, which covers an area of about 13½ acres and includes 20 courts, and more than 1,000 halls, chapels, and private apartments.

Installations have also been made in the palace of Cardinal Pacelli, papal secretary of state, in the famous picture gallery of the Vatican, and in the Castel Gandolfo, part of the Alban summer estate.

These steps towards the modernization of the buildings just mentioned took place during the latter part of 1931. Installations are now in progress in the palace of Monsignor Francesco Borgongini Duca, secretary of extraordinary affairs, and one of the negotiators of the Lateran Treaty of 1929.

The Studio del Mosaico will also be heated by oil. This is the workshop where more than 11,000 various shades and colors of glass pastes are employed in making mosaics for church decorations.

The Vatican City's newest building, the radio station, will also have an oil heating plant, and the Collegio Etiopico which was built in 1919.

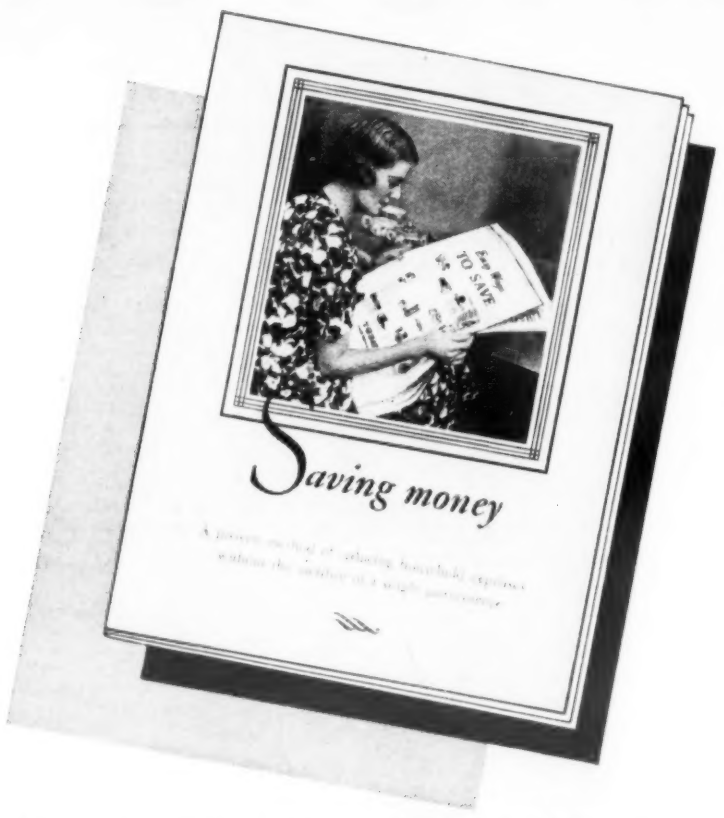
Other famous buildings included in this modernization of heating are the Palace of Justice, the Hospital of San Carlo, the Home of the Sisters of Santa Maria, and the palace of the Archbishop of St. Peter's.

LUCKENBACH JOINS STAFF OF INFRA-RED LAMPS

ROCHESTER, N. Y.—Samson-United Corp. of this city, manufacturer of infra-red lamps, electric heating pads and electric sleeping blankets, has appointed Paul Luckenbach director of its newly created health appliance division. In this capacity, Luckenbach will direct the commercial engineering, sales and merchandising of health appliances.

For the past three years, he has been connected with the General Electric Co. during which time he spoke to more than 900 groups throughout the United States on the part that ultra-violet rays play in everyday life.

THIS NEW BOOK *will help sell* FRIGIDAIRE



ANOTHER IMPORTANT STEP IN FRIGIDAIRE'S BUSINESS IMPROVEMENT PROGRAM

It's a new type of Book . . . packed full of selling punch . . . includes "money-saving" reasons why prospects should buy during the fall and winter . . . so fully illustrated and so attractively and logically arranged that it holds the prospect's interest throughout the entire Frigidaire story . . . one of the most powerful and effective aids ever prepared to help salesmen sell Frigidaire.

And in addition to this new Book are five other important steps in Frigidaire's Business Improvement campaign—

1. Sensational New Low Price—$112 (plus freight), with Federal tax paid—the lowest price at which a *genuine** Frigidaire has ever been sold. **2.** A revolutionary development—STATAFLEX—which gives ¼ more food space in the same sized cabinet. **3.** A half-million dollar advertising campaign—concentrated in 90 days' time. **4.** A nation-wide Radio Contest, offering a Cadillac and four other General Motors cars as grand prizes and 40 additional prizes. **5.** New low prices on three All-Porcelain Frigidaires.

And this concerted drive for more business is bringing astonishing results. Total *September sales* of Frigidaire household models *topped August sales* by 28% *in dollars and cents* and 43% *in units.* Dealers are enthusiastic and their encouraging comments are being received from every section of the country.

Frigidaire's Business Improvement Program proves that Good Business is back for those who back Good Business! Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.

**WARNING:* A cheap, underpowered and poorly constructed refrigerator at any price is expensive for you to sell. Customer satisfaction—your greatest asset—is assured with this genuine Frigidaire. Nothing has been "cheapened." It is the same Super-Powered, two-cylinder Frigidaire made and guaranteed by Frigidaire Corporation, a subsidiary of General Motors.

FRIGIDAIRE

A General Motors Value

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

Published Every Week by
BUSINESS NEWS PUBLISHING CO.
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Electric Range Sales Flop

HEARTENED by the announcement that range manufacturers were planning to spend several hundred thousand dollars in promoting the sales of electric ranges this year, numbers of electric refrigeration distributors have undertaken to sell the idea of electric cooking to their refrigeration users and other good prospects.

But for one reason or another the program fell flat. Disappointed was almost every manufacturing and distributing organization in the public's response to the tidings that at last electric cooking has become fast, economical, and efficient. Range sales volume this year has afforded almost nobody opportunity for self-congratulation.

Manufacturers pulled their punches. They cut advertising programs. They did nothing startling. And whereas the end of the 1931 refrigeration selling season found electric refrigeration sales organizations eager to obtain range franchises, today there is a marked apathy—and sometimes an unconcealed antipathy—among refrigeration distributors toward the idea of electric cooking.

That electric ranges can be sold, and that electric refrigeration distributors can sell them better than anybody else, has been proved by the records of a few scattered distributors this year. The fact of the matter is that few refrigeration distributors—even after they have taken on the line—are themselves sold on the sales possibilities of the range.

First among the obstacles to range sales—in the minds of many distributors—is the non-cooperation of public utilities. In the past, electric ranges have been sold almost entirely by the central stations. Under the range industry's new plan of specialty distribution, power companies must buy these products through distributors—thus obtaining a smaller discount and being forced to sell at higher retail prices. Naturally, many utility merchandising departments haven't been moved to put forth their best efforts under this new arrangement, even though their primary purpose in selling ranges be that of increasing the load on their lines.

Moreover, some who claim to be "on the inside" aver that public utilities are in reality directly responsible for the slow progress of electric range sales. Because so many central stations are allied (through holding companies, and the like) with gas interests and because gas cooking is so great a source of revenue to the gas companies—it is declared that those on high in some utility circles have decreed that the electric range shall be impeded.

It is even whispered that there has been a "deal" in which top utility men have agreed to promote the electric refrigerator as against the gas refrigerator, and the gas range as against the electric range.

This situation, of course, could be true only in the case of a few mammoth amalgamations of power interests. Some public utilities are openly and actively promoting electric range sales. Witness Mr. Arkwright and his Georgia Power Co.

It is certain, however, that central stations are arresting the development of electric cookery in many sections of the country because of high rates, which make the use of electricity for cooking almost out of the question. This is particularly true in New York City. As the situation now stands, the market for electric ranges is almost as "spotty" as that for gas refrigerators.

Other central stations not only provide reasonable rates for range users, but go so far as to pay for the cost of installation and wiring, which is considerable. The range, of course, is not a "socket appliance," and requires rather an elaborate installation.

Another objection which may rest in the minds of distributors is that the range does not seem so clearly superior to previous methods of cooking—particularly by gas—as electric refrigeration does to ice, the damp cellar, and the outside pantry box.

Good salesmen can make out an excellent case for the electric range, *but they must be trained.* It is almost entirely a matter of education. And one failure of range manufacturers has been that *they haven't trained the distributor, too.* Before he can become sold sufficiently on the range to give it both barrels and all his ammunition, he *needs further education.*

Even though the electric range has not yet lived up to its promise as an ideal companion product to the electric refrigerator, the all-electric kitchen idea seems to be gaining in acceptance.

Both General Electric and Westinghouse, which manufacture a full line of kitchen appliances, including refrigerators, ranges, dishwashers, food mixers, fans, clocks, toasters, and percolators, are actively pushing the sale of all these devices as a unit. G. E. now has on the road a number of traveling (aerocar) all-electric kitchens, by means of which the idea can be taken to housewives and demonstrated right at their homes.

The desirability of selling all these appliances as a single unit is especially evident in the apartment house and speculative building field. One salesman can land the entire order, instead of six salesmen trying to interest the builder in each of the appliances which go into modern kitchens.

The advertising appeal of an all-electric kitchen will undoubtedly be capitalized upon by apartment operators who are anxious to fill up their large proportion of vacancies. And just as the equipment of apartment houses proved to be the stepping stone toward household sales of electric refrigerators, the installation of complete electric kitchens in these "cliff dwellings" should help spread that idea out to individual home owners.

A potent sales "hook" in the presentation of the all-electric kitchen is that of kitchen planning. By efficient arrangement, lay-out, design, and coordination of equipment, housewives may be saved time, trouble, and effort.

Pursuing this idea, all-electric kitchen salesmen offer to furnish a scientific kitchen layout as an added inducement to purchase a coordinated set of appliances.

Builders, it has been found, appreciate such service—and buy equipment specified in the plan partially to get the plan itself. G. E. maintains an "institute" in Chicago which exists solely for the purpose of supplying efficiently planned kitchens to prospects.

Conversion of electric refrigeration sales organizations into specialty appliance merchandisers shows signs of moving in three different directions.

First movement is that of taking on all the products made by one manufacturer, which is especially true of franchises such as General Electric, Westinghouse, and Apex, and radio-refrigeration manufacturers like Majestic, Crosley, Sparton, All-American Mohawk, Stewart-Warner, and U. S.

Another movement is in the direction of human comfort—air-conditioning equipment (including heating devices, such as oil burners and coal stokers).

Third movement seems to be toward related kitchen appliances and the all-electric kitchen. Distributors who are leaning in this direction reason that once their salesmen have learned the language of food, they probably can sell several kitchen appliances with almost equal facility. And they feel sure that they can go back to many of their electric refrigerator users with a range or dishwasher and get a ready reception.

First of these movements is "closed" to all but those holding franchises of particular manufacturers. Second is gaining momentum rapidly, but requires a new engineering and sales technique for most distributors. The movement toward the merchandising of related kitchen appliances, however, appears to be the one to which refrigeration distributorships are most easily and quickly adjustable. The water seems to be warming up, and many wise distributors are getting in the swim.

Letters from Readers

Neutral Attitude

Grigsby-Grunow Co.
5801 Dickens Ave., Chicago
Oct. 12, 1932.

Editor:

Commenting on your editorial, "Companion Merchandise," which appeared in the Oct. 5 issue of ELECTRIC REFRIGERATION NEWS, I should like to say that our position in regard to distributors handling companion merchandise has been, to a very large extent, a neutral one. By this I mean that we judge each case individually and take into consideration all conditions and the general set-up of our distributor.

Most certainly we do not feel that a manufacturer should exercise any effort to prohibit independent distributors from increasing their dollar volume, provided it does not impair the merchandising and promotional activities of his product. Furthermore, provided that it does not impair the working capital or credit standing of the distributor.

It has been our experience so far that companion merchandise is a success in some instances and in others a complete failure. It is really dependent upon the distributor's ability to organize and finance a business of more general activities and wider scope.

Many distributors make the mistake of believing that additional lines can be handled without creating any material increase in overhead or selling expense.

This is not true and, therefore, it behooves the distributor who contemplates additional lines to take into consideration that his overhead will be increased and that he must organize for sales divisions on a basis that will not impair the activities of his major lines.

If a distributor has sufficient finances and if he will properly organize and conduct his business in such a way that our merchandise is actively promoted and on a basis we consider equitable, we have no hesitancy in recommending that the distributor take on companion lines.

As to what those lines may be we do not make any comments or suggestions to our distributors unless we find that they are about to make an obvious mistake in the selection of merchandise or the type of lines they intend to add to refrigeration and radio.

JOHN F. DITZELL,
General sales manager,
Refrigeration division.

Encourage Dual Lines

Williams Oil-O-Matic Heating Corp.
Bloomington, Ill.
Oct. 13, 1932.

Editor:

The editorial in your Oct. 5 issue outlines some constructive information for electrical refrigeration distributors and dealers. We have encouraged a number of our distributors and dealers to handle companion lines of merchandise along with Ice-O-Matic, and we know of many cases where the plan is working out entirely satisfactory.

It seems to me that the biggest problem that distributors and dealers are confronted with today is their overhead and being able to do a large enough volume of business to take care of their overhead, and possibly make a profit.

With the number of distributors and dealers that are in the refrigeration business today and with the slowing up of sales in general as compared with previous years, I believe that it is advantageous for a distributor and dealer to handle companion lines along with electric refrigeration.

But with most organizations this should be confined to either two or three additional lines. It would, of course, depend upon the lines of merchandise that they were taking on. Some lines would require much more sales effort than others.

It is my belief that distributor and dealer sales organizations can materially reduce their cost of business by handling possibly three different lines of specialty household merchandise, which would enable them to pro-rate their overhead over three lines instead of putting all the burden on the one line; however, it is very important that the distributor or dealer organizations are specialty sales-minded and have separate sales managers heading each department.

One of the biggest costs in specialty business today is in the securing of the prospect. Where we have specialty appliance lines, handled by one organization, it will enable them to get additional prospects for each line they are handling at a much lower cost.

STANLEY C. BELL,
Sales manager,
Ice-O-Matic division.

Right Down the Alley

Bohn Refrigerator Co.
Saint Paul, Minn.
Oct. 7, 1932.

Editor:

We have for some time been intending to comment regarding the front-page editorial in the Sept. 7 issue of the NEWS.

It is down our alley—in fact, it is right down the center—primarily because our organization has for many years been interested only in building and spreading the message of quality refrigerators.

While our Bohn electric has been before the public a little less than two years, our company has been in the refrigerator business 35 years. This entire period has been dedicated to the policy of quality building.

If the experience of these 35 years counts for anything, we might state that our experience proves definitely that a high-grade refrigerator (either ice or automatic) is the only type that can render satisfactory performance over a period of time.

Going further, we consider that with electric refrigeration, the cabinet is of just as much importance as the mechanism. This, because the finest piece of machinery in the world cannot properly do the work of refrigerating foods, and at the same time carry the added burden of inferior cabinet construction. A good cabinet will permit a properly designed refrigerating unit to perform in the manner which its inventors intended.

By a good cabinet we mean one that has substantial general construction, heavy insulation, correct engineering of its arrangement and refinement features, plus an exterior and interior finish that is both lasting, sanitary, and nice appearing.

We might state further that our past experience with many of the different makes on the market would show that the various mechanisms have, alone, a man-size job to deliver proper refrigeration in even the best of cabinets after a year or two of operation; let alone trying to carry the added penalty imposed by cheap cabinet construction, which cheap construction results because price is the governing factor with many manufacturers.

Speaking of price. We think that many in this fine refrigeration industry, and particularly those who have set themselves up over-night as refrigeration specialists, would do well to remember the words of that wise old boy, Ruskin:

"All works of quality must bear a price in proportion to the skill, time, expense, and risk attending their invention and manufacture. Those things called dear, when justly estimated, are the cheapest."

L. L. MURRAY,
Assistant sales manager.

Kind Words Dept.

"Your publication, ELECTRIC REFRIGERATION NEWS, has been very highly recommended to me by George I. Boone, vice president in charge of sales, Zero Plate Corp., 410 North Michigan Ave., Chicago."—Earl S. Voorhis, 427 West 20th St., Oklahoma City.

"Since we have started using your publication, ELECTRIC REFRIGERATION NEWS, we have read a great many interesting articles which we know have been of much benefit to us."—P. T. Kuhn, Southern Specialty and Fixture Co., Savannah, Ga.

"I understand from Mr. Bitterlich of the Iceless Refrigeration Accessories Co. that your publication, ELECTRIC REFRIGERATION NEWS, contains very valuable service information and would, therefore, be valuable as a reference work for our students in the refrigeration class."—J. C. VanHorn, president, Philadelphia School of Wireless Telegraphy, Philadelphia.

"Sometime ago we ordered 18 copies of May 18 edition of the NEWS, and have found them very helpful in cases where uninformed salesmen are making misrepresentations.

"We understand that your June 2 edition is another very illuminating edition, and we would like six copies which kindly mail us at once."—B. F. Kimrey, Kimrey Refrigeration Co.

"Enjoyed your paper very much."—Robt. Birkenmaier, Quincy, Ill.

"Will you kindly send us an additional copy of your Aug. 10, 1932, air conditioning issue? We find this issue very comprehensive and valuable."—C. E. Huening, Reliance Refrigerating Machine Co., Chicago, Ill.

"Sure want Aug. 10 NEWS, the air-conditioning number."—C. L. Clark, Oklahoma City.

"I confess that I have enjoyed very much each issue of ELECTRIC REFRIGERATION NEWS I have received; and while my opinion doesn't amount to anything, I think for a trade journal it is far above any like organ I have seen, not only as a valuable source of information, but also a very interesting periodical to read.

"ELECTRIC REFRIGERATION NEWS has always been a 'tonic,' you might say, during my association with the refrigeration industry, and so long as I should be connected with that field you may be sure I shall want everything you print on the subject."—Thos. G. Hayden, 415 Duquesne Drive, S. H., Pittsburgh.

105 Distributors Attend Convention Of Leonard Organization

DETROIT—Practically every state of the Union was represented at the fifty-second annual convention of the Leonard Refrigerator Co., held Oct. 11 and 12 in this city. One hundred and five distributors and members of their organizations were present.

Those present included:

L. N. Bloom and E. S. Hershberger, both of B. W. Smith, Inc., Cleveland; R. I. Gargett, J. B. Richardson, and M. Sampson, all of the Columbus Ignition Co., Columbus, Ohio.

C. F. Schlink, William Raglein, Carl Ritter, W. B. Muse, J. Nichols, A. D. Kelly, and R. D. Lombard, all of Buhl Sons Co., Detroit; J. B. Ogden, J. L. Hudson Co., Detroit.

J. R. DeVries, R. A. Utter, and C. Zwaadyk, H. Leonard & Sons, Grand Rapids, Mich.; E. H. Thornburg and Paul Thornburg, Foster-Thornburg Hardware Co., Huntington, W. Va.

S. C. Kahn and J. F. Hall, Capital Paper Co., Indianapolis; F. E. McWhirter, A. M. Ripslinger, and R. S. Swain, General Distributing Co., Saginaw, Mich.; S. Roberts, Roberts Toledo Co., Toledo; C. M. Baumgartner and Harry Skinner, Baumgartner & Co., Toledo.

J. Christadoro, Radio Specialty Co., New Orleans; O. K. Spurrier, Spurrier's, Inc., Oklahoma City; J. A. Lee, Interstate Electric Co., Shreveport, La.

J. Graham Hambly, Graham Hambly & Son, Los Angeles; P. H. Lyon, Chanslor & Lyon Stores, San Francisco.

R. P. Good and S. S. Metz, Radio and Motor Service, Altoona, Pa.; S. G. Rogers, and N. Rish, Bluefield Supply Co., Bluefield, W. Va.; H. B. Alderman, and R. H. Davison, H. B. Alderman, Inc., Buffalo.

Julius Klein and W. L. Brous, Klein Stove Co., Philadelphia; M. E. Colomb, Arnold Epstein, and William McClelland, J. A. Williams Co., Pittsburgh; W. D. Stuart, Jr., Richmond Hardware Co., Richmond, Va.; L. J. Warner, Warner Distributing Co., Syracuse, N. Y.

F. C. Ferber and R. B. Green, Southern Wholesalers, Inc., Washington, D. C.; S. S. Front, Front Electric Co., Wheeling, W. Va.

L. C. Wiswell, L. C. Wiswell, Jr., R. E. Ford, H. O. Kennedy, Jay Gordon, James Wiswell, and F. C. Viola, L. C. Wiswell Co., Chicago; A. A. Schneiderhahn, A. A. Schneiderhahn Co., Des Moines, Iowa.

W. A. Shockley and M. Meyers, Northern Hardware Co., Menominee, Mich.; J. J. Dougherty, J. J. Dougherty Co., Milwaukee; A. Van Antwerpen, and J. Roth, Radio Specialty Co., Milwaukee.

J. B. Frey, Central Supply Co., Minneapolis; M. S. Livingston, Harry Cohen, and L. N. Luckey, Auto Equipment Co., Omaha.

William Bischoff and M. Bergman, Marietta Chair Co., Cincinnati; L. J. Ryer, and C. A. Jones, Mace-Ryer Co., Kansas City, Mo.; Phil A. Russell, Russell Philco Co., Kansas City, Mo.; L. M. Ross, C. M. McClung Co., Knoxville, Tenn.

S. A. Mason, and Sidney Stineau, Smith Radio Co., Louisville, Ky.; John M. McGregor, and R. J. Martinetti, McGregor's, Inc., Memphis, Tenn.; L. T. Hudson, McWhorter-Weaver Co., Nashville, Tenn.; M. F. Maroney, Cohen Furniture Co., Peoria, Ill.

N. B. Williams, Williams Philco Co., Peoria, Ill.; W. P. Crisler and H. B. Levy, Aeolian Co. of Missouri, St. Louis, Mo.; E. C. McKelvey, E. C. McKelvey Radio Co., Salina, Kan.; L. E. Cox, General Supply Co., Springfield, Mo.; E. L. Stimpson, and G. H. King, Stimpson Sales and Investment Corp., Wichita, Kan.

George B. Ryan, Momsen, Dunnegan, Ryan Co., El Paso, Tex.; W. A. Hower, Refrigeration Engineering Co., Muskegon, Mich.; H. L. Gilham, Gilham Electric Co., Atlanta; W. C. Knopf, Domestic Electric Co., Birmingham, Ala.; F. M. Bultman, Cain Radio Co., Jacksonville, Fla.

G. W. Hensel and W. A. Griswold, E. S. & E. Co., Albany, N. Y.; J. H. Burke and Tom Burke, J. H. Burke & Co., Boston; C. A. D'Elia, D'Elia Electric Co., Bridgeport, Conn.

L. S. Ramsey, Vermont Hardware Co., Burlington, Vt.; L. E. Lathham, R. E. Hunting, R. F. Downing, and W. T. Ohman, E. B. Latham & Co., New York City; H. R. Tracy, and Bill Godfrey, Ballou, Johnson & Nichols, Providence, R. I.

Field men of the company, who spent the entire week in Detroit, were:

George B. Gray, Texas and Louisiana; Bernard J. Roe, Philadelphia; S. D. Camper, Detroit; G. E. Rogo, New York and Boston; H. E. Brasier, Denver; Lee Stratton, Cincinnati; B. E. White, Florida; J. B. Nicholson, Pacific Coast; and H. F. MacGrath, Chicago.

BUILDING TRADE ACTIVITIES EXPAND DURING AUGUST

WASHINGTON, D. C.—Activity in the building trades expanded in August in the country's larger cities, according to a recent statement by the Bureau of Labor Statistics, Department of Labor.

The increase was chiefly in residential buildings which showed an advance of 20.6 per cent in prospective costs. Non-residential construction declined 3.7 per cent, while additions, alterations, and repairs moved upward 10.1 per cent, it was stated.

Permits issued in 352 cities showed an increase of 4.5 per cent. The estimated cost of the structures covered by the permits is to be $37,137,073, compared with $35,548,679 reported in July permits.

OVALLE SALESMEN CANVASS 2,400 USERS FOR PROSPECTS

HARRISBURG, Pa.—Six senior salesmen of N. K. Ovalle, Inc., are spending their entire time during the period between Sept. 26 and Nov. 1 in contacting General Electric refrigerator users in Harrisburg, Allentown, York, Altoona, Wilkes Barre, and Scranton.

Each salesman is scheduled to make 400 calls and to collect a list of prospects which will be campaigned during the sales drive later in the year.

News of Refrigeration Advertising And Sales Promotion

VALUE OF ADVERTISNG DISCUSSED BY DAILY

CLEVELAND—Walter J. Daily, advertising and sales promotion manager of General Electric Co.'s electric refrigeration department, is the writer of an editorial appearing in the October issue of *Nation's Business*.

The editorial, "Advertising is the Fuel of Business," is one of a series written by leading advertising men for *Nation's Business*. Complete text of Mr. Daily's article is as follows:

Text of Editorial

"A few years ago, William Wrigley made a statement to the effect that advertising is to business what fuel is to the locomotive. Stop the fuel supply and the locomotive stops—stop advertising and business slows down.

"Advertising also might be compared to life insurance which pays dividends only if kept up. There is no black magic about advertising. It is simply one of the major distribution costs. But, more important, it is one of the most powerful economic forces in existence.

"What business needs today is the same faith in advertising and sales promotion that it had in these two forces during the fair weather periods. Experience shows that advertising is often more effective in poor times.

"What advertising needs is men who know more about it than the preparation of magazine and newspaper advertisements.

"It is easier to buy a market today than at any time during the last 10 years. The advertising dollar goes farther.

"There are many cases on record, wherein companies have ceased advertising and have stayed in business for a considerable period. But there are no such cases wherein a penalty has not been paid eventually."

DESIRABILITY OF QUALITY STRESSED IN BOHN BOOKLET

ST. PAUL—Stressing the desirability of quality rather than extremely low price, a new folder has been furnished Bohn electric refrigerator distributors and dealers by the Bohn Refrigerator Co., for circularization among their prospects.

Substance of the folder's text is contained in this statement: "We are against hoodwinking people into believing that any refrigerator sold at a cheap price will give them everything that the honestly made, honestly priced refrigerators will deliver."

A series of short paragraphs is then devoted to an outline of principal Bohn refrigerator features. Closing the folder's text are several excerpts from national magazines, emphasizing the wisdom of buying quality merchandise.

Expense, Triviality Dooms House Organs

NEW YORK CITY—It is because their over-emphasis of triviality has made them ineffective, and because they have been expensive in make-up, that many house organs have been discontinued during the past three years, said Bertram Lewis, Commercial Credit Co. vice president, in an address at the Direct Mail Advertising conference here recently.

"The human race is not so childish as many writers think," he said. "It has its kid side, and woe to any publisher who wholly ignores it, but it has its deep and fine side, too, and it is to that side that it prefers to be appealed—not in ponderous and pedantic terms, but in language that snaps out a thought and makes it challenging.

"It has high respect for any business institution which pays for space in which to publish messages on worthwhile subjects of any kind. It can be interested and diverted for the moment by other methods of approach, but where institutional goodwill is the objective, no method is as valuable as the one of seriousness."

Distributor Mimics Will Rogers Style

SANTA BARBARA, Calif.—Val Felger, distributor of Norge refrigerators here, is making effective use of what might be called the Will Rogers technique in advertising.

Felger calls his place of business "Trading Headquarters," and refers to himself as the "Old Trader." Two or three times a week he places a 5-in. single-column advertisement in local newspapers, like the following:

Val Felger
—The Old Trader—
Says:

To the People of Santa Barbara:

I see where Greta Garbo is still highbrowing folks—even her home folks, the Swedes. She's the first Norge to get famous as a hot tamale, though; so she's got plenty to be proud about. Now, you take this Norge refrigerator I'm handlin' down here. It sticks to Nordic principles. It stays cool, and you can always depend on it. If you are strugglin' along with an old-fashioned ice box, you needn't. Just bring it in, and I'll trade you the new trouble-free Norge for it. Let's talk it over; 'cause it don't take nary a cent to talk to Val.

Yours,
VAL FELGER.

GOODE TELLS MAJOR ECONOMIC JOB OF U. S.

NEW YORK CITY—"There is only one major economic element in the world today—the restoration of American retail trade. Secure that, and the whole world will restore itself."

This was the statement of Kenneth Goode of the Biow Co., New York City, when he discussed the current economic situation and its effect on advertising at the Direct Mail Advertising Association conference here a fortnight ago.

"Within three years, advertisers will be spending $1,000,000,000 per year in newspapers alone. By that time, I hope, newspapers will have awakened to the fact that direct mail, instead of a foe to be smothered, is a magnificent ally," he said.

"The depression is advertising's greatest achievement. Next two years will find a keener appreciation of advertising by American people. The advertising pages of great newspapers are already as interesting as the *New Yorker*."

Pointing out the vast scope of the nation's retailing, Mr. Goode said, "Two thousand billion individual selling transactions are required to keep up with normal demand in the nation. The vast organization which makes these transactions is worth $1,000,000,000,000—three times the amount of our national wealth."

TEN DIRECT MAIL PIECES USED FOR SERVEL DRIVE

EVANSVILLE, Ind.—Postage amounting to several hundred dollars on a single mailing is being spent by Servel Sales, Inc., in sending literature to dealers in the Servel Gold Rush sales contest, according to J. T. Elliott, supervisor of the Servel mailing department.

Each one of the Servel "forty-niners" enrolled in the Gold Rush is scheduled to receive 10 or more mailing pieces during the contest. Postage on some of the mailing pieces has run as high as six cents each, making the total on a single mailing several hundred dollars, states Elliott.

NEWSPAPER ADVERTISEMENT SELLS G. E. JUNIOR

ALBANY, N. Y.—Proof that a newspaper advertisement was responsible for the sale of a General Electric Junior refrigerator is given by E. F. Fyler, sales promotion manager for A. Wayne Merriam, Inc., General Electric distributor here.

The first advertisement carrying the announcement of the secondary line of G. E. refrigerators was inserted in an evening paper. The next morning a woman came to the salesroom, mentioned that she had seen the advertisement, and wanted a G. E. Junior.

These Coils are a Feature Selling Asset—

They are Standard Equipment with these Manufacturers—

SERVEL COMMERCIAL Electric Refrigeration	Copeland DEPENDABLE Refrigeration DETROIT, MICH	WILLIAMS ICE-O-MATIC REFRIGERATION BLOOMINGTON, ILLINOIS	Carrier Brunswick Kroeschell REFRIGERATION	MAYFLOWER
UNIVERSAL DETROIT, MICH	KULAIR PHILADELPHIA, PA.	Zerozone Lifetime Refrigeration	Electric-Automatic REFRIGERATOR PHILADELPHIA	MOHAWK REFRIGERATOR WITH THE OUZONE UNIT
STARR-FREEZE Electric Refrigeration	DICELER BRADLEY-H MACHINE CO. GREENVILLE, PA. U.S.A.	Apex CLEVELAND, O.	Modern	H. M. ROBINS COMPANY EXPORT

93 STANDARD SIZES

LARKIN REFRIGERATING CORPORATION
Originators and Manufacturers
ATLANTA, GA.

OVER 6,000 INSTALLATION COMBINATIONS

Over 35,000 being used!

Solve the problem of *excessive* dehydration - - - *excessive* shutdowns for defrosting coils - - - show the prospective users the economy of a *minimum* of costly servicing and *lower* power costs and you have offered four powerful selling aids to commercial electric refrigeration.

That LARKIN COILS solve these problems is *proven* in their widespread use and their adoption by leading manufacturers, distributors and dealers.

New Data for You

New data on Refrigerating Efficiency constantly issued and available from any of the manufacturers whose trade marks are shown here.

LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

Statistical Hounds

If a son of mine should ever want to be an advertising man, I'd see to it that he studied mathematics from the cradle straight through to his first disappointment in love.

He'd begin right off with the multiplication table; at the tender age of eight he should be able to do nine-place long division in his head; algebra and the various geometries before his first long pants; fundamental and differential calculus by the time he begins to inspect seriously the down on his lip; and when he should be ready for the polls, I'd want him to be deep into the quantum theory, fourth dimension, relativity, and celestial mechanics.

Why? Because the most important thing in life to most advertisers seems to be statistics.

Before I knew better it used to be my notion that an advertising man was a literary genius who had sold his soul to Mammon.

Nowadays I'm more inclined to believe that this strange creature is one who spends his time juggling the 1929 Census of Distribution, dividing and subdividing the population according to income groups, arriving at a buying power index by multiplying the money in circulation in Appleton, Wis., on the night of June 13 by the cube root of the distance from Pier 14 to the mysterious retreat in the Universal Cooler factory where "Jeff" Johnson hides out when you call on him, and laying objects end-to-end to see how far they will reach.

Along about this time of year advertising agencies begin to make us here at the Business News Publishing Co. wish we had gone in for portrait painting, or steeplejacking, or some nice, quiet trade in which one wasn't called upon to give statistical breakdowns of all the unavailable information on an industry.

A toothache or a colicked baby aren't in the same class with an advertising agency questionnaire as a sleep-robber.

And if those boys can use statistics to as great an advantage as they can ask questions about them, our hats come off. They must know their stuff.

* * *

Mathematical Triffit

The above dissertation was inspired by a speech we heard at the banquet of Leonard's fifty-second annual convention here last week.

This speech was delivered by E. L. Triffit, Leonard account executive for Brooke, Smith and French, Detroit advertising agency.

And if we hadn't known in advance that Mr. Triffit was an advertising man, we couldn't have believed that we were hearing what we heard.

Casually, during the course of a lengthy discussion of business discussions, Mr. Triffit let fall from his tongue the Graybar figures on America's potential buying power.

If you are curious to know just what a feat that was, turn to page 15 of your Oct. 12 issue of ELECTRIC REFRIGERATION NEWS, and look those statistics over.

Because we had just finished putting that issue to bed before we heard Mr. Triffit pull his 'Mazing Masked Mental Marvel stunt, we had a fair recollection of some of the figures he was quoting. And they seemed to be about right.

* * *

Gillen and Gillilan

That Leonard convention was pretty well covered in the last issue of the NEWS. But there were a few tag-ends which we might pick up.

There was Strickland Gillilan, for instance, the humorist who probably wishes he had never written "Off Again, On Again, Gone Again, Finnigan." We had heard him a number of times previously, but he was still funny.

Best crack was caught only by Mr. Triffit (a close personal friend of Gillilan) and the Valve. It was like this:

Two of Corine Muer's entertainers were playing "Ah, Sweet Mystery of Life" on an inner tube. One pumped air into it, and then the other varied the flow of escaping air through a reed to fashion the tune.

Gillilan opined that that was a good stunt for a blowout.

Frank Gillen, who is associated with Corine Muer, and who is known as "the Man with 3,000 songs," presented his new song, "Stop Looking Down," for the first time in public at this banquet.

Frank is a good entertainer, and is the personification of the "Smile, damn you, smile" commandment. His picture will be found on this page.

Another presentation came when Leonard field men gave Sales Manager Petrie and his right-hand man, R. R. Ludington, a pair of valuable tokens.

When Ludington was asked to make a speech of acknowledgement, he paused, smiled, and said:

"Thanks."

Tag-end No. 3: Vice President Burritt mentioned a water carnival which had taken place at President Mason's summer home on the Au Sable.

"Water carnival?" queried Mr. Gillilan, unbelievingly.

"Sure," replied Merchandising Director Taylor. "What er carnival!"

Tag-end No. 4: Observation of the Leonard team of Petrie and Taylor with one of their aides during their convention and pre-convention labors produced the following thumb-nail sketches.

* * *

A. M. Taylor

Albert M. Taylor is a product of New York State . . . he's of Scotch-Irish extraction . . . his specialty sales experience began as a door-to-door peddler, selling suit-hangers, at the tender age of 10 . . . in later years he sold advertising novelties, calendars, signs, etc., over practically the entire United States.

He's a salesman first and an advertising and sales promotion man later.

He served as advertising and sales promotion manager for the Franklin automobile people . . . then deciding that electric refrigeration was a coming business, got into the game as advertising and sales promotion manager with Copeland early in 1927.

In 1930 he joined Kelvinator as advertising manager, and in January, 1931, he became advertising and sales promotion manager for Leonard in addition to his Kelvinator duties . . . the growth of Leonard brought about his appointment as merchandising director July 1, 1932.

Taylor wields a mean pen . . . he's an organizer . . . gets things done without waste motion . . . likes to get out into the field so he can meet the forces on their own ground . . . an interesting talker, he has a fund of clever stories . . . he can be serious, but prefers not to be . . . sings (see ELECTRIC REFRIGERATION NEWS, Leonard convention number, 1931—Expansion Valve) . . . quotes poetry on any provocation, everything from Invictus to Casey at the Bat . . . thinks Bob Petrie is the greatest sales manager in captivity.

* * *

R. I. Petrie

Robert I. Petrie . . . born in Scotland in 1895 . . . makes him one of the youngest major executives in the electric refrigeration field . . . large family of brothers and sisters . . . manual labor of the most strenuous kind developed a naturally strong physique . . . built him into a real husky . . . made him tireless.

At 18 he landed in Canada with nothing but a desire to work . . . held various clerical jobs . . . finally landed with a wholesale grocery house at Hamilton, Ontario, as a clerk . . . sickness of one of the company's travelers caused the house to force him to go out after orders . . . he collected so many that they never let him return to a desk.

Foreseeing the hard picking that has put many such grocery jobbing houses out of business, he quit and came to Detroit . . . spent some time in the adding machine business as a salesman.

Started in 1925 with Kelvinator as a district manager . . . branch manager for Kelvinator in Washington, D. C., during 1926.

Transferred to ReDisCo in January, 1927, as new business manager, where his good work caused his retransfer to Kelvinator sales . . . branch manager, district manager, and then regional manager, which job he was holding down hard when transferred to the post of sales manager of Leonard, July 1, 1931.

Petrie's ability to get things done is reflected in the record of his first year . . . added 22 new distributors . . . added 2,000 dealers . . increased unit sales 232 per cent of previous year.

Petrie is not the rushing, blustering, table-hammering type of sales manager . . . works quietly, smoothly, surely . . . seldom has to retrace his steps because his moves are thought out carefully and clearly in advance . . . and into his thinking goes much good, Scotch common sense and practicality.

He has the patience and perserverance to dig for the facts . . . to go to the bottom of a problem, analyze it, weigh its factors and base his decision upon them . . . and when he has decided—he acts!

Among his associates he is known as "Carload" Petrie . . . this cognomen fastened itself to him automatically following his first transcontinental trip for Leonard, on which he mailed back such a succession of carload orders from point after point that the order department is still talking about it.

Petrie loves to sell . . . without any waste of words—without any seeming eloquence—sets forth his proposition clearly, forcibly, convincingly . . . hard bargainers, "chiselers," faze him not at all.

He builds his case on facts—and stands behind them . . . he has a confidence-inspiring manner . . . a pleasing personality; men like him—recognizing that he is a square-shooter.

* * *

Remarkable Remarks

During the Leonard convention Mr. Petrie divested himself of these remarkable remarks:

"During all of last year, only five Leonard dealers asked that the factory give more than a one-year service guarantee on each unit."

"We propose to stick to the one-year guarantee in the future."

"Kelvinator is the female of the species."

"In the past, each new dealer has been required to take an initial stock of four units. Now he need take only two—pay 10 per cent down and the balance in six months."

"ReDisCo's rate for its financing service is same as last year. Two other credit companies have increased their charges."

"Distributors who have a diversified line *must* have a separate department to handle refrigerator business."

"Factory promotional efforts, and distributor promotional efforts are lost to a large extent, unless distributors send representatives for personal follow-ups on all prospective dealers."

"Don't economize on dealer contact men. Employ plenty. You need them to get repeat business. Repeat business is profitable."

"I believe refrigeration is at the lowest price it will be for a number of years."

* * *

Pathway to Hell

In spite of the fact that theater cooling is not new, playhouses have been capitalizing to the limit this year on their air-conditioning systems.

Recently we saw two amusing juxtapositions of movie titles and the "cooled by refrigeration" slogan in the lighted letters which adorn movie sidewalk canopies. They were:

MERRILY WE GO TO HELL
COOLED BY REFRIGERATION
and
EMIL JANNINGS IN PASSION
COOLED BY REFRIGERATION

Which reminds us that in the near future we'll probably hear no end of jokes about the air-conditioning salesman who died and went to Hades.

* * *

Kettering and Eakin

ELECTRIC REFRIGERATION NEWS was among the first of the nation's periodicals to present Charles Kettering's idea that "production monotony" (making too much of the same thing) is the chief cause of the current depression.

Since that time, Mr. Kettering, who is vice president and director of research for the General Motors Corp., has been quoted far and wide and often on his theory that new products and new desires will bring us out of the doldrums.

ELECTRIC REFRIGERATION NEWS is a hearty subscriber to this idea, and has plugged it in editorials on numerous occasions.

At the gathering of Frigidaire distributors and district managers in Dayton a few weeks ago, when the decision to market a $112 model was reached, the idea was restated in new and vigorous words by go-getting Con Eakin, manager of the highly successful Frigidaire New York City operation.

If you're looking for a new motto to hang on the walls of your office—and most of us need a new one—we can think of none better than Mr. Eakin's pungent statement, to wit:

"The time has come when old methods and old ways of thinking no longer get results. We have departed from our former ways. The time has come to shoot the works."

Jolly Good Fellows

A. M. Taylor (the man with the ukelele), Leonard's merchandise manager, joins Frank Gillen (with the accordion), "the man with 3,000 songs," in a little close harmony on Leonard's boat trip.

A Refrigerator Today, Lady?

Clair Strain, right halfback on the University of Wisconsin football team this year, spent his summer vacation in the employ of D. S. Stophlet, Inc., Westinghouse refrigerator distributor, Madison, Wis., installing and selling Westinghouse refrigerators.

According to officials of the distributorship, Strain plunged into selling by picking up leads while making installations. He succeeeded in making several sales by following up leads from such sources.

Strain promises to be a real threat on the Wisconsin eleven, for carrying cabinets and units kept him in good condition all summer.

Those who remember that the greatest halfback of all time, Red Grange of Illinois, carried ice during his vacations will be ready to concede that Strain has simply modernized a good idea.

RHODE ISLAND BUREAU HAS PUZZLE CONTEST

PROVIDENCE, R. I.—Tying in with the bureau national publicity and advertising during October, the Electric Refrigeration Bureau of Rhode Island is spotlighting refrigeration among the dealers in Rhode Island through a cross-word puzzle and a 25-word essay contest, from Oct. 10 to 22, according to H. E. Dawson, executive secretary of the Electrical League of Rhode Island.

The cross-word puzzle is built up of words is used in electric refrigeration, such as ice-cube, preservation, food, etc. The essay is to be written on why "Electric Refrigeration is Necessary in the Winter as Well as in the Summer."

Over 100 dealers in Rhode Island will participate in a simultaneous showing of a window display featuring this cross-word puzzle contest. Cold cookery recipe books and entry blanks will be furnished all the dealers through the Rhode Island bureau.

Fifty-five electrical prizes will be given for the successful solutions of the puzzle. Newspaper copy and radio broadcasting is doing the advertising for the dealers. The success of the campaign is being keyed in two ways; first, through the number of recipe books given out by the dealers, and second, by the number of entries.

EDUCATION OF RETAILERS FACTOR IN SALES DRIVE

BOSTON—Education of retailers on the point that they could vie with their more modern competitors only if they installed up-to-date equipment was probably the biggest factor in the success of the commercial division of Gentsch & Thompson, General Electric distributor for Boston, during the first six months of 1932, says E. G. Pierce.

Total sales amounting to $102,000 were hung up by the commercial division during this six months' period.

A lengthy and complete training course in commercial selling was prepared for all commercial salesmen, and the value of such training showed itself in the campaign, Pierce states.

Daily meetings in which salesman were able to exchange views and ask questions were also very helpful, Pierce points out.

Salesmen were required to spend at least a third of their time in cold canvass, as it was found that any less effort expended in this way resulted in a sharp decline in individual sales.

BANCROFT TAKES LEAD IN COLE APARTMENT SALES

NEW YORK CITY—Records of the apartment house division of Rex Cole, Inc., General Electric distributor of this city, show that Herbert G. Bancroft, sales director, Manhattan division, has successfully taken the lead (in number of sales) among the four divisions which comprise John J. Massimi's contingent.

Clarence J. Robbins and Henry Miserocchi, salesman, according to Bancroft, deserve a large portion of the credit for the number of sales they completed during the period.

R. COOPER SALESMEN PLAN CHRISTMAS SALES DRIVE

CHICAGO—More than 100 dealers for the Hotpoint range attended a meeting held recently by R. Cooper Jr., Inc., G. E Hotpoint range distributor, at which plans for the Christmas range sales campaign were presented.

Balsam-Wool
Sealed Slabs
EFFICIENT
PERMANENT
Completely satisfactory Refrigerator Insulation

WOOD CONVERSION COMPANY
Industrial Sales Offices:
CHICAGO, 360 N. MICHIGAN AVE.
New York, 3107 Chanin Bldg;
Detroit, 320 Stephenson Bldg.

How To Operate a Distributorship

As Practiced By E. H. Schaefer Corp., G. E. Distributor

By Elston D. Herron

MILWAUKEE—"Ready-made buyers belong to past ages. Today we must *create* purchasers."

"And to create them, a sales organization must find, and use new ideas. Most old ones won't work."

First statement comes from D. E. Anderson, new general manager of the E. H. Schaefer Corp., Milwaukee General Electric distributor. Second is that of E. H. Schaefer, president of the firm.

It is because these two men, and the entire Schaefer organization, are convinced of these statements, that the company attempts to make its every sales activity smack of a "something-new" appeal which changes prospects into buyers.

Work with Department Stores

Most recent scheme of this company for selling household electric refrigerators is one whereby Schaefer salesmen cooperate with, and work through Milwaukee's three Schuster stores, largest department store organization in the city.

Through an agreement with these stores, all of which sell General Electric refrigerators, the Schaefer Corp. has secured names of 15,000 Schuster customers who do not own electric refrigerators, and whose credit is classed as "excellent" by Schuster credit men.

From this list, a number of prospect names is taken each week, and to each housewife is sent a personal letter from a Schuster store, advising her that a General Electric salesman will call on her in the near future, and that it will be to her advantage to hear what he has to say.

Sell Refrigeration Need

On his first call, the Schaefer G. E salesman has but one objective—to "sell" the housewife on the need for electric refrigeration. He obtains from the prospect information regarding the size of her family, kinds and quantities of food purchased, and average costs of ice refrigeration.

His second call has as its purpose that of justifying the purchase of a General Electric refrigerator. The salesman's chief selling tool on this call is a "proof proposal" which he has prepared on a standard form from information given by the prospect on the first visit.

This proof proposal shows the prospect that an electric refrigerator will help her save money in four ways: with it, she may buy food in larger quantities, take advantage of food bargains, eliminate food spoilage, and eliminate ice costs.

Trial Installation

The salesman then asks the prospect's permission to install a General Electric refrigerator in her home for 30 days' free trial, and assures the prospect that this is the only way possible to prove that his estimates of savings have not been exaggerated.

Soon after the unit has been installed, Miss Holdine Knaak, home economist from E. H. Schaefer Corp., calls at the prospect's home, advises her on how to use a General Electric, prepares a frozen dessert for the prospect, and leaves.

Ten days later, Miss Knaak calls again at the prospect's home, answers any questions the housewife may have about the refrigerator, and tells her how to use the G. E. to best advantage. If the prospect is still not in the "buying mood," the home economist calls again after the unit has been in use 20 days.

Reports Progress

Miss Knaak is Schaefer Corp.'s "inside man." After the General Electric has been installed for a trial, the salesman does not call to make an attempt at sale-closing until Miss Knaak reports that the prospect is ready for a final interview.

If 30 days pass, and the home service woman still has not reported favorably on the prospect's attitude, the salesman attempts to close the sale just before the refrigerator is taken out of the house.

It is the plan of Mr. Schaefer to have 200 units installed for free trial each month. Both the department store organization and the salesman will receive a commission on each sale—the salesman for contacting and selling the prospect, the store for supplying the prospect and using its name and reputation to secure an entree for the salesman.

Commercial Program

In the commercial field, E. H. Schaefer Corp. is attempting to promote sales, according to E. V. Oakwood, commercial manager, by guaranteeing each prospect that the Schaefer company can offer him "savings, complete service, and relief from all worry and confusion in buying and using commercial equipment."

The last point, says Oakwood, is invaluable as a sales-maker, because many prospects would rather use antiquated equipment than buy a new case from one firm, a new refrigerating unit from another, and still face a possibility of having inferior refrigeration, because when service is needed, case and refrigeration companies sometimes may blame each other for all trouble, with the result that neither is willing to give satisfactory service.

E. H. Schaefer Corp. is able to make a guarantee of satisfaction, says Commercial Manager Oakwood, because it buys display cases from a local manufacturer, installs G. E. units in them, and sells the complete cases to commercial equipment users.

"By this plan, the user avoids the confusion which often results from buying the case and the unit separately. His commercial equipment needs can be filled with a single purchase. He knows whom to call for service, as we take all responsibility for proper functioning of both case and unit.

Service Factor

"We have found that our over-all service guarantee is often a chief factor in making commercial sales," says Oakwood.

This company is also attempting to increase sales of display cases by using a miniature case—small enough to be carried in the rear seat of an automobile—for demonstration purposes. The model is a model of the cases actually sold by the company, and permits commercial salesmen to make a more forceful sales presentation in the prospect's store.

"It is difficult to get commercial prospects to our salesroom," explains Oakwood, "but with our miniature display case, we can demonstrate, in the prospect's place of business, what the new equipment would be like. It does much to lessen sales resistance."

Cooperate with Utility

A plan whereby the Schaefer organization works cooperatively with the Milwaukee Electric Railway and Light Co. (Milwaukee utility company) is used in most of the Schaefer Corp.'s Hotpoint range-selling activities.

The utility company does not sell ranges, but employs four salesmen to assist Milwaukee distributors and dealers in selling them, and displays any make of range in its showroom without cost to the distributors.

When a Schaefer salesman sells a range to a customer desiring to make payment on the instalment plan, the utility will finance the sale, if the buyer is considered a good risk.

For each range sold by a Schaefer salesman on the instalment plan, the utility pays the distributor 94 per cent of the total contract price for the range, installation, and wiring. Balance is paid to the utility by the buyer in 24 monthly instalments.

Range Selling

Schaefer range salesmen and utility salesmen work together in most range sales. All household refrigerator salesmen get a 2 per cent commission on each range sale made to a prospect discovered and reported by them.

Range sales are promoted in the fall-and-winter season by intensive direct-mail campaigns. Cooking schools are held four times per week in the all-electric kitchen on the floor above the new Schaefer salesroom.

Miss Knaak demonstrates features of the Hotpoint range, and tells those present at the schools that $5 will be paid to anyone submitting the name of a prospect who buys a range within 30 days.

Mr. Schaefer states that the cold canvass is used extensively in securing prospects for all appliances, and that "using the user" has also proved to be an effective prospect-getter.

"One of the best ways of getting prospects for laundry equipment," says Harry C. Allen, manager of the laundry equipment department, "is use of the classified advertising columns.

"We advertise that we have for sale at reduced prices several washers or ironers which have been repossessed or used as demonstrators. When a prospect makes an inquiry, we try to sell him a new appliance. The 'used equipment' is a good come-on."

Store Demonstrations

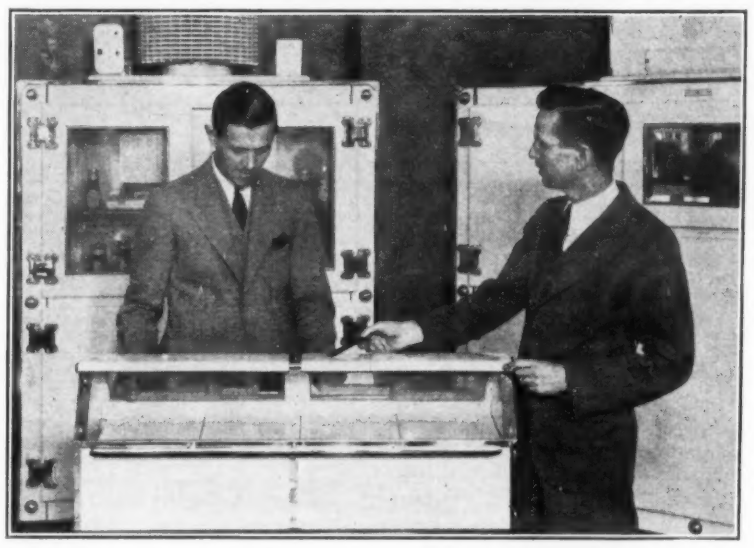
Another scheme which has been effective in selling household refrigerators, according to Mr. Schaefer, is that of demonstrating a household model in a store where new General Electric commercial equipment has just been installed.

"When we have just placed a new display case or commercial cabinet in a food store, we secure the owner's permission to place a household unit near the front of his store for a few days.

"As customers come in to do their marketing, our salesman gives each one a small gift, and reminds him that he may have the same protection for food in his home as is used by his merchant in preserving food at the market," says Mr. Schaefer. "We get many good prospects with this plan."

The distributor is a strong advocate of sales contests, and tries to keep some sort of competition in progress among his salesmen at all times.

Miniature Commercial Display Case



E. V. Oakwood (left), Schaefer Corp. commercial manager, shows E. H. Schaefer some fine points of the new miniature display case.

Prospect Gives Sales Talk, Pays Cash

CHICAGO—When a prospect not only pays cash for an electric refrigerator, but actually knows the major selling points, it proves almost too much for a salesman, according to H. E. Kampp, manager, Oak Park branch, Frigidaire Sales Corp. here.

Mr. and Mrs. E. T. Fogarty of Oak Park visited the Commonwealth Edison refrigeration exposition in the Loop. The Stataflex demonstration in the Frigidaire booth interested them.

The next day Mrs. Fogarty entered the Oak Park branch of Frigidaire Sales Corp., Chicago, and walked up to an S-5. Without batting an eye, she shot at the salesman:

"Has this cabinet Stataflex construction, a two-cylinder compressor, five coats of Duco, and ten and two-tenths sq. ft. of shelf space?"

The salesman, according to H. E. Kampp, somewhat startled and taken aback, finally assured Mrs. Fogarty the S-5 had all she desired, and then was more overcome when she replied: "Send one right out."

Instead of talking terms, she wrote a check for $141, the full amount, thanked the salesman, and left.

4 G. E. COMMERCIAL UNITS PURCHASED BY BAKERIES

NEW YORK CITY—Four more General Electric commercial refrigerators will be added to the equipment of the Veizon Bakeries here, according to L. Howard Jenks, Jr., manager, commercial department, Rex Cole, Inc., General Electric distributor of this city.

Jenks cited Lawrence Hickey and Charles Inman, salesmen, for their efforts in securing the contract.

The four models CS-1202 will be installed in four new branches of the rapidly expanding company. The addresses were not made known.

N.E.L.A. ISSUES BOOKS ON ELECTRIFICATION

NEW YORK CITY—National Electric Light Association's committee on new residence sales has issued to member companies two publications designed to promote complete electrification of new homes.

Purpose of these new booklets is to aid in selling complete equipment of built-in major appliances, artistic lighting fixtures which give scientifically correct illumination, and adequate and complete wiring to all builders of new homes.

First of the two publications is a 40-page, illustrated booklet for distribution among all prospective builders of new homes.

In its first pages, it gives general recommendations for wiring the new residence.

Remainder is devoted to non-technical discussions of illumination and electric appliance requirements of each room in the modern home.

With this book for the prospective builder of a new home is a folder containing recommended standards for electrical wiring in new residences. Recommendations are confined to provisions for the number of outlets, their nature and control, and methods of servicing them.

Second publication is a manual for commercial executives of member companies, advising them in some detail how to launch increased activities in selling wiring, fixtures, and major appliances.

PROFESSOR'S WIFE WINS NORGE PUZZLE CONTEST

ST. LOUIS—Mrs. R. L. Davidson, Jr., wife of a professor at University of Missouri at Columbia, Mo., was adjuged winner of the Norge cross-word puzzle and essay contest in the Missouri territory, and was presented with a check for $500 by the Norge Co. of Missouri at the Greater St. Louis Industrial Exposition in the Mart building, here.

W. G. Gaston, contest manager of Norge Co. of Missouri, presented the check. The contest was participated in by thousands of housewives, and required more than three weeks to select the winner, according to H. H. Walker, sales-advertising manager of the Norge Co. of Missouri.

HORN & HARDART CHAIN ADDS TO G. E. ORDER

NEW YORK CITY—In addition to the 70 units of General Electric refrigeration equipment recently installed in Horn & Hardart chain food stores and restaurants, these stores will add seven more units, according to L. Howard Jenks, Jr., manager of commercial department, Rex Cole, Inc., General Electric distributor here.

A. B. Salto who was responsible for obtaining the other orders, also was instrumental in gaining this most recent contract. An ice cream cabinet, model DC-4 and a D-54 unit, for a special cabinet, have been installed.

NEW, LOWER PRICES ON McCORD COMMERCIAL EVAPORATORS

WRITE FOR NEW McCORD CATALOG GIVING LOWER PRICES ON McCORD EVAPORATORS. INCREASED DEMAND AND LOWER METAL COSTS MAKE POSSIBLE A SUBSTANTIAL PRICE REDUCTION. THE SAME SATISFACTORY McCORD ALL-COPPER COIL WITH FLEXIBILITY OF ARRANGEMENT TO MEET HEAT, LOAD AND SPACE REQUIREMENTS.

McCORD RADIATOR & MFG. CO.
DETROIT, MICH.

TWO MILLION RURAL HOMES ELECTRIFIED

NEW YORK CITY—At mid-year 1932 there were approximately 1,000,000 farms with electric service from power companies and individual plants, and 1,000,000 other rural customers outside of incorporated cities and villages, according to the report of the rural electric service committee of the National Electric Light Association on the progress in rural and farm electrification.

Based on the Bureau of Census definition of rural territory, which includes all areas outside of towns of over 2,500 population, the total number of customers served in rural territory was approximately 4,000,000, the report states.

A summary of the statistics given in the report shows that at the end of 1931 there were 698,786 farms served by electricity, as compared to 177,561 at the end of 1923. This is an increase of 521,225 farms or 293 per cent, averaging 65,150 or 36 per cent yearly for the eight-year period. On April 30, 1932, there were 702,963 farms served.

New England Figures

Of this total number of farms served, the New England section of the country accounts for 52,543. In 1923, the total for New England was 15,922.

The Middle Atlantic section, comprised of New York, New Jersey, and Pennsylvania, had a total of 105,210 farms served in 1932, as compared with 29,918 in 1923.

Figures for the East North Central district are 169,458 farms served in 1932 as compared with 32,657 in 1923; for the West North Central district 89,880 in 1932 and 19,776 in 1923.

In the South Atlantic division the total for 1932 is 46,837 as compared with 6,910 for 1923; and in the East North Central the figures are 31,920 for 1932 and 6,261 for 1923.

495,848 in Eastern Area

This brings the total for the Eastern area of the United States to 495,848. In the Western area, where irrigation may be involved, the total for 1932 is 207,115.

There are only three districts in the western area, the West South Central with 22,355 farms served in 1932 as compared with 4,475 in 1923; the mountain district with 44,881 in 1932, and 10,928 in 1923; and the Pacific district with 139,879 in 1932, and 50,714 in 1923.

The 10 states having the largest number of farms served at the end of the year 1931 are: California, 86,548; New York, 51,439; Ohio, 45,730; Pennsylvania, 41,467; Wisconsin, 37,833.

Washington, 36,143; Michigan, 34,230; Iowa, 31,688; Illinois, 26,994; and Indiana, 22,106.

9.3% Increase in Service

An increase of 9.3 per cent in the number of farms served, and 15.8 per cent increase in kilowatt hours consumed is reported for the eastern area of the United States, from 1930 to 1931. In the western area for the same period the increase in the number of customers was 3.3, and the increase in consumption, 2.7.

Telephones were reported in 34 per cent of the farm homes. Piped water was had in 15.8 per cent of the farm houses and in 8.4 per cent farm house bathrooms.

Of the number of farm homes in the United States with electric lights, 596,014 or 9.5 per cent are reported as receiving service from power lines, and 249,342 or 4 per cent from farm plants, making the total 845,356 farms lighted by electricity. This number is only 13.5 of the total number of farms.

The number of farms having tractors and motor trucks is about the same as the total number of electrically lighted houses, 845,335 farms or 13.4 per cent having trucks, and 851,457 farms or 13.5 per cent having tractors.

Automobiles were owned by 58 per cent of the farmers. According to the statistics, there are still 945,000 stationary engines on farms, a large percentage of which, undoubtedly, could be replaced by electric motors, states the report.

Power Company Service

The percentage of farms located on hard surface roads throughout the country is about 9.4, or about the same number as receive electric service from power companies.

The capacity of generating facilities for the year 1931 for the whole of the United States, rural and urban, according to statistics of the National Electric Light Association, was 33,076,906 kw. The total number of kwh. generated was 85,575,307,000, and the number of customers served was 24,497,670.

The accompanying table shows the total number of rural homes and the number of rural homes having electric service.

The Committee on the Relation of Electricity to Agriculture was organized by representatives of the American Farm Bureau Federation and the National Electric Light Association in 1923. It was recognized that while farmers wanted electric service and officials of power companies desired to render the service, the results then being obtained were not satisfactory.

These representatives thought that the cost of delivering the small amount of electricity required for the farm home was excessive. The farmer thought that he could not afford to pay even the delivery costs, and the power companies could not afford to extend lines, and render service, for the low revenue then apparent, it was reported. To meet these problems, the above-mentioned committee was formed.

The present membership consists of representatives from the following organizations: American Farm Bureau Federation; American Home Economics Association; American Society of Agricutural Engineers; General Federation of Women's Clubs; Individual Plant Manufacturers; National Association of Farm Equipment Manufacturers; National Electric Light Association; National Electric Manufacturers' Association; National Grange; State Project Directors; U. S. Department of Agriculture; U. S. Department of Commerce; U. S. Department of Interior; and members-at-large.

Use of Electricity

When the problems confronting this committee were analyzed, it became evident to the committee that there was relatively little information available regarding how the farmer could use electricity. Acting in the light of this analysis, a nation-wide plan was put in motion to obtain information on possible uses and to stimulate the development of new uses.

Consequently state organizations were organized in 25 states to support an investigation program which would yield information relating to the use of electricity in agriculture.

The responsibility for conducting the investigations was placed by the state committees in the hands of officers of state agricultural colleges or experimental stations.

In addition to these activities, the National Rural Electric Project, located near College Park, Maryland, was organized in 1928. Here investigation work has been conducted both in the laboratory and on the farm. This project will be completed in 1933.

300 Publications on Problem

The results of the nation-wide investigation work have been made available through more than 300 publications on various phases of this problem which have been issued by the Agricultural Experiment Stations, Agricultural Extension Service, state committees on the relation of electricity to agriculture, and electric light and power companies.

A bibliography of the more important of these publications is given in C.R.E.A. (Committee on Relation of Electricity to Agriculture) Bulletin, Vol. 7, No. 1. In addition to this, the C.R.E.A. News Letter, issued from time to time, contains a running bibliography of current publications.

There have been listed 227 uses for electricity on the farm, and 190 uses in industries located in rural territory. As the investigation work progressed, workers found that the problem of getting suitable electrically operated equipment from the manufacturer to the farmer became of increasing importance.

In order to deal with this problem, a farm equipment committee was organized in 1927 by the commercial national section of the association.

The rural electric service committee early advocated the employment by electric light and power companies of men especially qualified to handle rural electric development. In some cases, companies established rural service departments; in other instances these men were located with one of the established departments.

Today there are approximately 1,000 men with electric light and power companies devoting part or full time to extending electric service into the country and developing the load on existing lines.

To train these men further, agricultural colleges have been offering rural electric short courses where the work is designed to assist the rural service representative to meet more efficiently the problems of his territory. For the past four years from five to ten of these courses have been held annually.

Progress of Rural Electrification

	Total Number of Rural Families (Homes) Farm	Non-Farm	Rural Homes Receiving Electric Service Farm	Non-Farm
Total United States	.....	.....	**530,060**	**3,564,322**
Maine	37,990	81,508	8,837	66,092
New Hampshire	13,931	37,945	3,258	35,901
Vermont	25,217	34,123	6,276	31,071
Massachusetts	.....	.....	3,188	81,749
Rhode Island	2,449	11,003	574	15,705
Connecticut	18,139	97,835	6,268	94,539
New England	.....	.....	**28,401**	**325,057**
New York	.....	.....	41,717	309,927
New Jersey	.....	.....	8,462	140,633
Pennsylvania	.....	.....	32,790	296,109
Middle Atlantic	.....	.....	**82,969**	**746,669**
Ohio	239,759	297,696	38,044	186,416
Indiana	198,419	173,321	18,005	131,490
Illinois	.....	.....	17,961	190,757
Michigan	.....	.....	24,547	158,165
Wisconsin	188,125	133,086	30,111	121,772
East North Central	.....	.....	**128,668**	**788,600**
Minnesota	.....	.....	10,876	71,549
Iowa	221,078	152,272	22,904	133,872
Missouri	267,958	179,484	11,394	104,402
North Dakota	77,647	41,429	1,665	23,576
South Dakota	83,463	44,798	2,500	30,599
Nebraska	131,780	85,416	7,474	71,141
Kansas	167,094	121,391	9,725	94,115
West North Central	.....	.....	**66,538**	**529,254**
Delaware	10,723	18,373	1,057	12,478
Maryland	50,024	99,059	5,850	69,069
Dist. of Columbia	0	0	0	0
Virginia	188,750	153,098	8,047	52,152
West Virginia	88,142	169,023	2,528	48,406
North Carolina	298,922	164,667	8,454	66,919
South Carolina	174,334	102,722	2,697	26,300
Georgia	285,898	142,791	2,511	38,151
Florida	59,965	114,286	3,386	29,112
South Atlantic	**1,156,758**	**964,019**	**34,530**	**342,587**
Kentucky	251,895	150,040	5,737	52,350
Tennessee	258,554	116,837	6,277	32,175
Alabama	273,773	135,217	8,506	29,208
Mississippi	304,490	79,983	1,972	23,621
East South Central	**1,088,712**	**482,077**	**22,492**	**137,354**
Arkansas	247,673	91,795	2,423	27,427
Louisiana	175,681	105,244	1,120	28,549
Oklahoma	215,866	135,673	3,699	54,235
Texas	.....	.....	8,228	102,107
West South Central	.....	.....	**15,470**	**212,318**
Montana	49,029	40,301	1,876	19,975
Idaho	41,890	33,049	10,875	23,158
Wyoming	17,092	21,122	408	11,144
Colorado	64,802	61,184	6,109	36,036
New Mexico	34,280	37,935	971	7,409
Arizona	20,967	47,001	3,398	12,921
Utah	21,191	30,760	12,794	18,705
Nevada	3,678	12,098	876	4,165
Mountain	**252,929**	**283,450**	**37,307**	**133,513**
Washington	76,402	102,451	29,130	75,962
Oregon	57,239	69,551	15,186	47,178
California	.....	.....	69,369	225,820
Pacific	.....	.....	**113,685**	**348,970**

Appliance Outlets Surveyed In N. Y.

NEW YORK CITY—In the four major boroughs of this city, Manhattan, Brooklyn, Queens, and the Bronx, there are more hardware stores selling electrical appliances than any other group, according to a survey conducted by the Electrical Association of New York, to determine the types and number of dealers in the four principal parts of the city who sell appliances and radio.

Ralph Neumuller, managing director of the association, conducted the study. As yet, chain stores and drug stores have not been included in the survey.

The number and types of dealers investigated by Neumuller are as follows:

Type of Retailer	Number of Retailers	Percentage of Retailers in This Group
Hardward Dealers	919	39.8
Contractor-Dealers	435	18.9
Radio-Electrical Dealers	332	14.4
Exclusive Electrical Dealers	135	5.8
Exclusive Radio Dealers	134	5.8
Furniture Stores	112	4.9
Department Stores	79	3.4
Electrical Jobber-Retailers	72	3.1
Radio Jobber-Retailers	62	2.7
Central-Station Stores	28	1.2
	2,308	100.0

444 FURNITURE STORES SELL REFRIGERATOR UNITS

CHICAGO—In a survey of 726 furniture stores in 37 states, conducted by the American Furniture Mart of this city, in cooperation with the National Retail Furniture Association, it was found that 61.2 per cent or 444 of the stores sell electric refrigerators.

Over 82 per cent of these 726 furniture dealers were found to be handling one or more electrical appliances.

The stores investigated in the survey represent 3⅓ per cent of all the furniture stores in the country rated at $5,000 or more, according to Lawrence H. Whiting, chairman of the board of the Furniture Mart.

The number and percentage of furniture dealers found to be handling other electrical appliances are given in the following table:

Appliance	Percentage of the 726 dealers handling this appliance	Number of dealers handling this appliance
Vacuum Cleaners	67.1	487
Refrigerators	61.2	444
Washers	58.8	427
Clocks	41.9	304
Irons	39.8	289
Toasters	28.1	204
Percolators	24.8	180
Ironers	23.7	172
Sewing Machines	21.9	159
Heaters	17.9	130
Food Mixers	15.3	111
Ranges	12.7	92
Vibrators	4.4	32

STATISTICS SHOW NO MARKED INCREASES

WASHINGTON, D. C.—Reports by the mercantile agencies show a steadiness in the volume of wholesale and retail trade that has been lacking for several months, but available statistics reveal no marked improvement, according to the October *Survey of Current Business* issued by the United States Department of Commerce.

During the first half of August retail dealers reported a good late summer movement but this receded toward the close of the month, states the report.

Footwear moved better in the first two weeks of September, particularly the higher-priced lines, and there was also the seasonal demand for clothing and general school supplies.

Buy Immediate Needs

Wholesalers and jobbers were seasonally active in late August and early September furnishing retail establishments with fall stocks. Purchases, however, were confined largely to immediate needs with frequent reorders and there is apparently little tendency yet to accumulate additional stocks says the *Survey*.

A moderate increase occurred in the value of department store sales during the month of August. This is the usual development at this season of the year but the gain was less than the average recorded in the past.

Compared with the July level, the Federal Reserve Board's adjusted index declined one point to 66 per cent of the 1923-25 average. The index makes allowance both for the number of business days and the computed seasonal trend.

Sales Volume Down 24 %

The volume of August sales was 24 per cent below August of last year, or the same relative decline as reported for the year to date. The New York department stores reported a much better comparison with a year ago in the first half of September.

Chain store sales for the first eight months of the current year were approximately 14 per cent lower in value than the turnover in the same period last year. August sales were 16 per cent below the same month in 1931, and also showed a marked decline from July.

Sales of the leading mail-order houses were slightly higher in August than in July, and the percentage decline from a year ago was less than in the preceding month.

Magazine advertising lineage for the month of August fell below July, and reached the lowest point of the present decline. Preliminary reports from agencies anticipate some betterment in fall expenditures.

Newspaper Lineage Gains

Newspaper lineage was well maintained in August and moved upward during the early weeks of September. Radio advertising schedules show some signs of improvement after a comparatively poor summer. Excepting the two latest months, however, radio advertising expenditures were considerably in excess of a year ago.

Business failures reversed the trend of the last four months, and the August total rose eight per cent from the level of July. Usually the low point of the year occurs in August, but early evidences indicate that the fewest failures will be recorded in September this year.

Figures for the first half of September showed a marked improvement, with both the number of insolvencies and the total liabilities considerably below the first two weeks in August.

A halt in the extended decline in factory employment and payrolls occurred in August. The employment gains for the month were in excess of the normal seasonal movement for this period, and the adjusted index of the Federal Reserve Board advanced from 58.3 per cent of the 1923-25 average to 58.8 per cent.

First Employment Increase

This was the first increase in employment exceeding the normal seasonal gain for any monthly period since the early part of 1931 which brought a temporary rise of business activity exceeding the usual spring movement.

In individual lines, 42 of the 89 industries reporting to the Bureau of Labor Statistics reported increased employment for the month, and 14 reported gains in excess of 10 per cent.

The bureau's statistics covering 16 major industrial groups revealed an increase of one half of one per cent in employment and a further loss of one per cent in payroll totals.

Factory payrolls also turned upward during the month, the first increase since February, the only month to break the decline since the first half of 1931. In general, the higher payrolls were reported for the industries in which employment was more plentiful. In the groups reporting declines the losses were moderate, excepting in the automotive and rubber-products industries.

Employment among trade union members improved somewhat in August with 33 per cent of the total membership unemployed, and a further 22 per cent on part time. Some further improvement was reported in September.

Export of Refrigerators

August, 1932, Shipments Reported by the Bureau of Foreign and Domestic Commerce, Washington, D. C.

	Electric Household Refrigerators Number	Value	Electric Commercial Refrigerators Up to 1 Ton Number	Value	Parts for Electric Refrigerators Value
Austria	...	...	...	...	$ 346
Azores and Madeira Islands	...	...	...	...	73
Belgium	36	$ 4,159	22	$ 2,291	4,547
Czechoslovakia	...	...	...	...	687
Denmark	...	...	4	387	1,206
Finland	3	185	...	...	28
France	87	8,209	6	515	9,986
Germany	4	377	1	248	1,694
Greece	10	990	...	...	...
Irish Free State	18	912	...	...	306
Italy	3	445	2	239	1,427
Netherlands	1	96	10	966	784
Norway	...	...	2	216	336
Poland and Danzig	...	...	1	134	71
Portugal	14	1,640	8	1,191	1,188
Rumania	1	99	4	447	10
Spain	49	4,943	8	736	1,413
Sweden	62	3,591	40	3,581	5,245
Switzerland	4	385	9	1,087	4,163
United Kingdom	134	11,318	11	1,357	8,909
Yugoslavia	...	...	...	...	23
Canada	116	20,918	42	6,995	9,097
British Honduras	...	...	...	...	7
Costa Rica	2	164	...	...	34
Guatemala	...	...	...	...	59
Honduras	...	...	1	878	12
Panama	5	685	1	217	266
Mexico	62	5,076	3	1,326	1,290
Newfoundland and Labrador	3	390	3	360	62
Bermudas	14	1,744	4	761	543
Barbados	9	950	...	...	5
Jamaica	10	1,830	...	...	5
Trinidad and Tobago	3	281	...	...	...
Other British West Indies	5	803	...	...	896
Cuba	13	1,072	3	646	718
Dominican Republic	8	1,046	1	211	115
Netherland West Indies	6	635	2	703	32
French West Indies	3	399	...	...	...
Haiti, Republic of	3	351	2	254	192
Virgin Islands of U. S.	1	225	...	...	45
Argentina	9	606	5	661	10,183
Bolivia	1	40	...	...	...
Brazil	99	9,382	14	4,370	1,375
Colombia	11	1,324	...	...	28
Ecuador	1	159	...	...	...
Uruguay	...	...	...	...	578
Venezuela	15	1,550	...	...	339
Aden	6	740	...	...	19
British India	51	3,833	6	1,363	857
British Malaya	13	1,205	2	240	399
Ceylon	6	845	...	...	16
China	94	8,395	9	908	2,581
Netherland East Indies	39	4,912	9	2,105	1,261
French Indo-China	...	...	1	156	357
Hong Kong	37	5,150	1	223	528
Japan	1	96	...	...	172
Palestine	6	706	1	261	56
Philippine Islands	60	7,500	4	775	1,209
Australia	...	...	...	...	1,915
French Oceania	...	...	...	...	13
New Zealand	2	161	...	...	286
Belgian Congo	1	130	...	...	14
Union of South Africa	340	37,252	32	6,091	1,514
Other British South Africa	6	628	...	...	...
Gold Coast	...	...	...	...	292
Nigeria	12	870	...	...	...
Other British West Africa	4	461	...	...	...
Egypt	2	165	2	189	266
Algeria and Tunisia	15	913	3	348	1,449
Madagascar	2	275	...	...	...
Morocco	21	2,366	4	394	1,520
Mozambique	1	83	...	...	...
Total	**1,544**	**$163,665**	**283**	**$ 43,830**	**$ 83,047**
Shipments to Hawaii	390	$ 41,621	65	$ 10,036	$ 4,026
Porto Rico	42	$ 5,034	7	$ 485	$ 900

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For Sulphur Dioxide or Methyl Chloride

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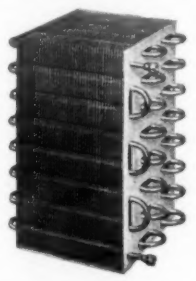

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Completely assembled and individually bagged. Ready for shipment in your refrigerator. Write for complete list of standard sizes and prices.

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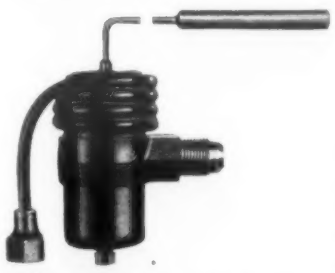

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Electric Refrigeration News

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'Dealers Who Are Training Staffs for Air Conditioning Will Profit'—Bickel

BUFFALO—Distributors and dealers who are now organizing and training staffs to supply a complete air-conditioning service are the ones who will find this rapidly expanding field profitable in the future.

This statement was the nucleus of an address on selling air-conditioning equipment made by J. M. Bickel of Carrier Corp.'s merchandising department at the annual meeting of the National Electrical Wholesalers Association held during the last week of September.

"Air conditioning will play no favorites," the speaker warned. "The opportunity, and it bids fair to be a big one, belongs exclusively to no group of distributors or dealers now in existence.

"Yet it will be comparatively simple for a new type of dealer and distributor to be born out of organizations already existing, or by combining two organizations (heating and refrigeration firms), and retaining the best features of each."

Defines Air Conditioning

Early in his address, Mr. Bickel attempted to make clear the meaning of air conditioning, and explained that many appliances now being labelled as "air conditioners" provide only one or two of several functions necessary to condition air.

"In its simplest form, the term 'air conditioning' means the control of indoor weather," he said. In winter air conditioning, we have, therefore, four factors entering into perfect control of indoor weather — heating, humidity, cleanliness, and distribution. In summer, we must cool, dehumidify, clean, and circulate the air.

"Many units offered in the name of air conditioning, units which at best are good only for humidification, may be even less effective than the radiator pan which can be bought for a few cents," the speaker asserted.

Mr. Bickel explained that he had no argument against manufacturers of room coolers who advertise their products as such, but told his hearers that to deserve even the name "room cooler," a unit must be capable of reducing temperature, dehumidifying, and circulating air.

No Longer An Experiment

"We are today up to a point where air conditioning is no longer an experiment," the Carrier representative stated. Air conditioning is today on the threshold of a development and public acceptance far greater than radio ever experienced or aspired to.

"But between radio of 10 years ago, and air conditioning of today, there is one vital difference. Whereas radio was a pioneering proposition from the standpoints of engineering, production, application, and merchandising, air conditioning today has already passed through all pioneering phases except that of marketing."

As to distributing agencies for air-conditioning equipment, Mr. Bickel said that in his opinion, there is no existing distributing organization which is fully prepared to handle successfully the merchandising of this product.

Separate Division

His statement on this point was this: "If you believe that there is money to be made in distributing equipment for air conditioning, room cooling, or humidification, it is up to you to decide, with your manufacturer, whether it will be worth your while to build a separate division of your business to promote this industry."

Mr. Bickel believes that it would be unprofitable for any dealer or distributor of air-conditioning equipment to establish an organization to handle sales of systems for large buildings.

Such deals must be made by the manufacturer, he thinks, because the latter has available the services of technical experts, and has wide experience in the field, both of which factors are essential in estimating the type and size of system needed for large installations.

Standard Equipment

"The big market of the future lies not in large, spectacular installations, but in the more or less standardized equipment now available for millions of homes, offices, restaurants, and stores. It is for this field that manufacturers will be seeking properly qualified dealers and distributors," Mr. Bickel said.

"To the manufacturer, air conditioning is not new. And no one questions the tremendous market which is apparently waiting to be sold. It may seem strange that there is not a line of air-conditioning units which can be supplied from the distributor's shelf as a packaged product to satisfy this consumer interest.

"And herein lies the danger. For no doubt, many units . . . will be offered the public as air-conditioning equipment—units designed to sell rather than serve, and on which you will have to hold the bag long after their sponsors are forgotten," he said.

Then this: "We cannot emphasize too much the importance of carefully maintaining high standards of performance to safeguard the public's goodwill and your own best interests over a period of time."

That manufacturers are not ready now, and will not be ready for some time, to supply air-conditioning equipment as a package product, was another of the speaker's statements. He then expressed the opinion that air conditioning breaks down basically into two broad divisions—heating and refrigeration; regarding this, he said:

"We can find plenty of dealers trained in the heating trade, many with specialty selling experience. We can also find dealers trained in commercial refrigeration. But if air conditioning is a combination of heating and refrigeration, it is but rarely that you will find dealers qualified to sell air-conditioning equipment, for they should have experience in both of these fields."

Get House in Order

The speaker's closing statement was this: "The smart dealer of the future, he who is going to be considered the air-conditioning expert in his community, is the one who will begin now to get his house in order, and be in a position to give his customers a complete air-conditioning service whether the call is for heating or cooling, humidification or dehumidification.

"If this is true of the dealer, it is even more true of the distributor, and those who are today prepared to build an organization to handle air-conditioning equipment on that basis, will find manufacturers ready and anxious to join hands with them."

52 KELVINATORS PLACED IN SEATTLE APARTMENTS

SPOKANE, Wash.—An order for 52 model K-4 Kelvinators for installation in the Tokyo apartments here has been secured by L. K. Vallandingham, manager of the refrigeration department of Tull & Gibbs, Kelvinator distributor of this city.

This is one of the largest electric refrigeration installations ever made in Spokane, according to Vallandingham. A carload of K-4s was needed to fill the order.

FADA EXPORT MANAGER ON 24TH OCEAN TRIP

NEW YORK CITY — Twenty-four trips across the Atlantic Ocean is the record of Philip Valk, export manager of Fada Radio and Electric Corp., Long Island City, N. Y., who sailed recently aboard the *S. S. Leviathan* to contact Fada radio distributors and representatives in France, Belgium, Switzerland, Italy, Spain, Portugal, and North Africa.

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THE CONDENSER

PAYMENT IN ADVANCE is required for advertising in this column. The following rates apply:

POSITIONS WANTED—Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. ALL OTHER CLASSIFICATIONS—Fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS WANTED

MECHANICAL ENGINEER. 17 years' experience in tools and production. 10 years on refrigeration. During past four years have designed and developed two successful machines. Wish to make connection with progressive manufacturer who is either in production or who would consider manufacture of a machine already designed, for top or bottom mounted. Box 510.

ENGINEER—14 years active in domestic and commercial refrigeration work. Experience includes thorough knowledge of thermodynamics and mechanics of gases, design of units, compressors, boilers and accessories (expansion valves, floats, thermostats, etc.), engineering management, laboratory, production and service work. Position desired with unit or parts manufacturer. References. Box 511.

REFRIGERATION EXPERT. Qualified by experience to act in chief or consulting engineering capacity offers his services to manufacturer now in production or considering to enter the industry. Licensed consulting engineer in State of New York. Box 514.

MISCELLANEOUS

FRENCH INVENTION—We offer U. S. and Canadian patents and working drawings for small and medium size commercial refrigeration unit. Successfully marketed in Europe and tropics. Ready to start manufacturing. No experimenting necessary. H. J. Houpert, Inc., Rye, N. Y.

BARGAIN

Stock of Larkin Coils

Our entire stock of brand new, unpacked, Larkin Coils for commercial display cases and storage boxes will be sold to the highest bidder. Company has retired from refrigeration business and is liquidating its inventory.

Stock can be seen at any time and is all guaranteed.

Write for details

Address Box 509
Electric Refrigeration News

MARION SAWYER NAMED ON HOME SERVICE GROUP

DETROIT—Miss Marion F. Sawyer of the Kelvinator home economics staff, has been appointed as a member-at-large of the Women's Home Service Committee of the National Sales Section of the National Electric Light Association by George B. Cortelyou, president of the association.

COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

NO.	PUBLICATIONS	YOU PAY	YOU SAVE
1	Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book	$4.00	$1.00
2	Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book	$6.00	$2.00
3	Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book	$2.00	$1.00
4	Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year)	$3.50	$ .50
5	Refrigeration Directory and Market Data Book and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year)	$4.50	$1.50
6	Refrigeration Directory and Market Data Book and Electric Refrigeration News (17 Weeks)	$2.00	$1.00

Order by number. Use coupon below. These rates for U. S. only.

Group Order Rates for U. S. and Foreign Countries

PUBLICATIONS	NUMBER	UNITED STATES*	CANADA†	ALL OTHER COUNTRIES	
Electric Refrigeration News	1 subscription	$3.00	$6.00	$4.00	These foreign
	5 or more, each...	2.75	5.75	3.75	rates will
	10 or more, each...	2.50	5.50	3.50	be increased
	20 or more, each...	2.25	5.25	3.25	on or before
	50 or more, each...	2.00	5.00	3.00	Jan. 1, 1933.
Refrigerated Food News	1 subscription	$1.00	$2.00	$1.50	These foreign
	5 or more, each...	.95	1.95	1.45	rates will
	10 or more, each...	.90	1.90	1.40	be increased
	20 or more, each...	.85	1.85	1.35	on or before
	50 or more, each...	.80	1.80	1.30	Jan. 1, 1933.
BOTH PAPERS	1 subscription	$3.50	$7.00	$5.00	These foreign
	5 or more, each...	3.25	6.75	4.75	rates will
	10 or more, each...	3.00	6.50	4.50	be increased
	20 or more, each...	2.75	6.25	4.25	on or before
	50 or more, each...	2.50	6.00	4.00	Jan. 1, 1933.

*U. S. and Possessions and Pan-American Postal Union Countries.
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☐ Send 1932 Refrigeration Directory and Market Data Book. $2.00 per copy.

Name .....
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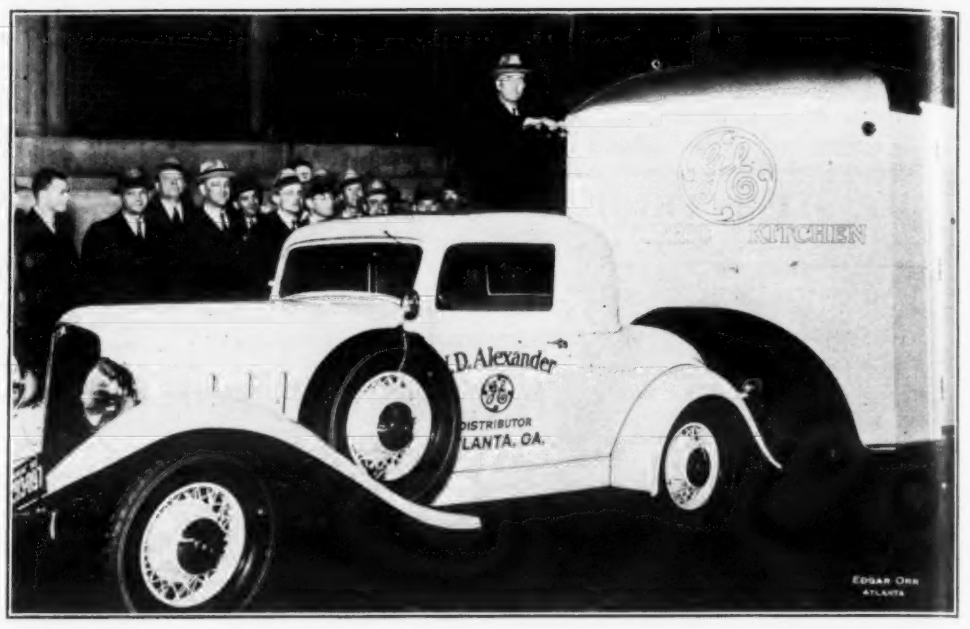
City ..... State.....

10-19-32

Fall Refrigeration Activities Told in Pictures

More than 60,000 persons viewed this live display of the B. O. Radio, Inc., Zerozone distributor in Newark, at the annual Essex Electrical League show which closed Oct. 8. The girl in the background explained Zerozone refrigeration through the use of "sales talks on posters."

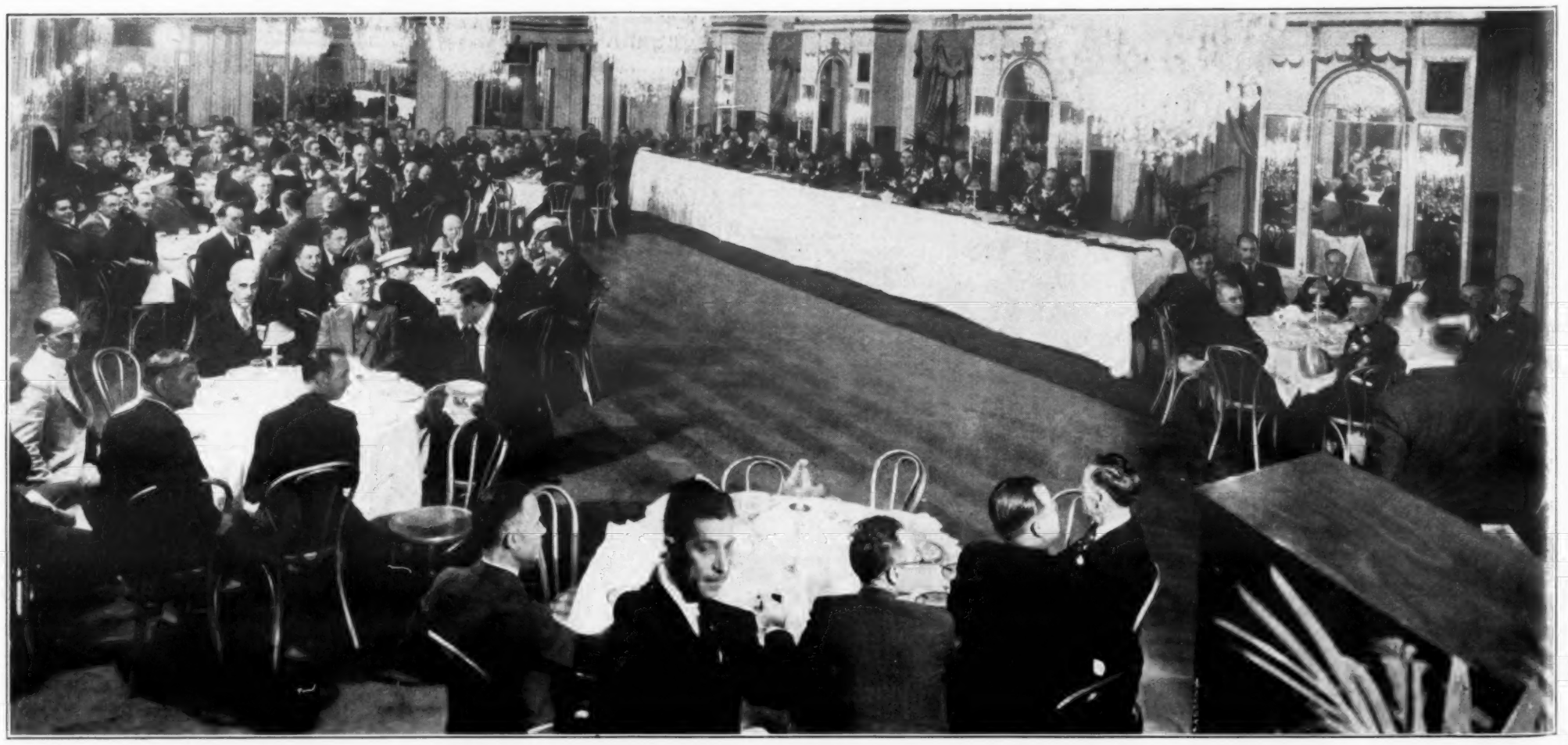


P. S. Arkwright, president of Georgia Power Co. and chairman of National Electric Cookery Council, christened the new General Electric kitchen coach of W. D. Alexander, Atlanta G. E. distributor. A bottle of Coca Cola, Atlanta's chief product, was used in the ceremonies.

J. T. Elliott, supervisor of Servel mailing department, inspects mailing of individual gold pans to salesmen enrolled in the Servel Gold Rush. More than 100 mail sacks were required to handle the shipment.

A. H. Zimmerman, Michigan Norge distributor, presents a $500 check to Harold N. Walker, Michigan winner in the Norge cross-world puzzle contest.

With military rites and a Corine Muer girl to place the flowers, the oldest Leonard ice box was laid to rest at the convention of Leonard distributors. The stunner is Katje Alamof, formerly of the Follies.



More than 100 Leonard distributors concluded a day filled with business at a banquet staged for them in the Book-Cadillac hotel, Detroit, last week. Talks by George Mason, president of Kelvinator Corp., H. G. Perkins, assistant to the president, and E. L. Triffit, vice president of Brooke, Smith, & French, Detroit agency, opened the evening's program which was under the direction of H. W. Burritt, vice president in charge of sales. Strickland Gilliland, humorist, and Corine Muer's entertainers provided the entertainment for the banquet.

WRITTEN TO BE READ ON ARRIVAL

Engineering Section

IN TWO PARTS PART TWO

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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NEW INSULATION BROUGHT OUT BY JOHNS-MANVILLE

'J-M Zerolite' Composed Of Rock Wool; To Be Cut-To-Fit

NEW YORK CITY—Johns-Manville is introducing a new insulation to manufacturers of electric refrigerator cabinets this fall, under the trade-name "J-M Zerolite." It is composed of 96 per cent rock wool and 4 per cent of a non-mineral, water-resistant binder, and has a structural strength that will maintain its original form despite severe vibrating conditions, the manufacturer claims.

The insulation is to be sold on a cut-to-fit basis, manufactured to special sizes according to specifications, the announcement states, prices being established on a "per set" or "per piece" basis.

Produced in Johns-Manville's Alexandria factory, the material was known as "Aerofelt" until its introduction to the refrigeration industry as Zerolite.

Water-Proof Envelope

It is wrapped in a water-proof envelope made from a 30-30 Duplex Kraft paper consisting of a layer of asphalt between two 30-lb. sheets of Kraft paper. Edges of the wrapped Zerolite are protected by the insertion of a chipboard strip running the full length and width of each section.

These chipboard edges are applied to increase the handling strength, and to prevent compression of the Zerolite filler pad due to weight caused by stacking the material in storage, the announcement explains. The water-proof envelope is sealed with a special sealing compound.

Prevents Bacterial Growth

The manufacturer claims that its mineral nature prevents bacterial growth vermin, decay, etc., and that it is free from odors. The wrapped insulation weighs from 6 to 7 lbs. per cu. ft.

Tests on Zerolite made in the Manville Research Laboratory gave the following conductivities, based on various mean temperatures:

Mean temp. °F.	20	30	40	50	60	70	80
Conductivity	.20	.207	.213	.219	.225	.231	.239

Mean temperature is defined as the arithmetical means of the two temperatures involved in the test. For example, if a sample were tested with 40° F. on the inside, and 80° F. outside, the mean temperature would be 60° F.

PLANT ENGINEERS DISCUSS NEW PRODUCT PROBLEMS

CLEVELAND—Practical problems that arise in the development of new products, with special emphasis on market research, were discussed by plant engineers and executives at a new products conference held here, Sept. 27 to Sept. 29, under the auspices of the Cleveland Engineering Society.

Information which would be of assistance to manufacturers who are considering the addition of new products or the redesign of present lines was presented by authorities in the various fields.

An evening session, addressed by Frederick M. Feiker, director, Bureau of Foreign and Domestic Commerce, Department of Commerce, opened the conference. Mr. Feiker spoke on "New Products—The Way Out."

During the following two days there were sessions devoted to research development, marketing, and products. P. E. Bliss, president, Warner & Swasey Co., Cleveland, presided at one session, and H. A. Schwartz, director of re-

(Concluded on Page 3, Column 5)

TEMPRITE WATER COOLERS BOUGHT BY LEATHER CO.

PEABODY, Mass.—The Hunt-Rankin Leather Co. here has purchased eight new Temprite multiple water coolers to provide drinking water for its employes. The system is refrigerated by a 3x3-in. Tilar water-cooled sulphur dioxide machine. Provision has been made in the installation for the later addition of 28 more Temprites.

Insulation Vital, Saunders Tells N.A.P.R.E.

NEW YORK CITY—Placing before the New York section of the National Association of Practical Refrigerating Engineers the proposition that upon proper insulation depends a large part of the success of any refrigerated chamber, Albert Saunders, chief chemist of the Lewis Asphalt Engineering Corp., demonstrated the way to put up corkboard or other insulation.

He illustrated his talk, which was given at the Oct. 6 meeting, with slides showing the construction of the Pennsylvania Dock & Warehouse Co.'s Jersey City cold storage plant. The meeting was presided over by Charles Herter, secretary of the section.

Mr. Saunders titled his paper: "The Erection and Protection of Refrigeration Insulation."

"No plant," Mr. Saunders began, "can

(Concluded on Page 3, Column 1)

TOUR COMPLETED BY SERVEL TRUCK

25,000-Mile Trip Across Nation Included 250 Stops

EVANSVILLE, Ind.—Completing a tour of nearly 25,000 miles, which covered territory from the states of Connecticut to Colorado, a Servel-equipped refrigerated truck has just returned to the Servel factory here, after nine months of continual use. Over 250 major cities in 23 states were visited during the trip.

The truck was equipped with a gasoline-driven refrigerating unit and a Hercules body, both manufactured by Servel, Inc. It had a 300-gal. capacity. The purpose of the trip was to demonstrate Servel mobile equipment to ice cream manufacturers and others interested in the delivery of frozen products.

R. L. Frazier, in charge of the truck, left Evansville early in January, returning to the factory Oct. 1. He reported that the truck encountered every type of roadway, climate, and weather, from the flat prairies of Kansas to the snow-covered passes of the Rockies. At one place the truck crossed the Continental Divide at an altitude of 10,500 ft. above sea level.

Wide variations in temperature were also encountered on the trip, according to Frazier. Sub-zero weather was common along the Atlantic Coast and in the Allegheny Mountains while a temperature of 105° F. was not common in New Mexico. Refrigerated compartments of the truck were maintained from zero to 5° below zero continuously with no interruption of service.

Practical demonstrations were made at approximately 650 stops. Among the states covered by the demonstrator were: Kentucky, Tennessee, Virginia, West Virginia, Delaware, Maryland, New Jersey, Connecticut, New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Missouri, Kansas, Colorado, New Mexico, Wyoming, Nebraska, South Dakota, Minnesota, and Wisconsin.

Back Home After 25,000 Miles

G. K. Specht, vice president of Hercules Products, Inc., congratulates R. L. Frazier, demonstrator, in front of the Servel factory after a 25,000-mile trip. The Hercules Servel-refrigerated trucks stopped at 250 major cities.

BUILD CREMEFREEZER TRAY FOR DESSERTS

(See Picture on Page 2)

MADISON, Wis.—Featuring a mechanism to eliminate fuss and muss in making frozen desserts, and so speed their required freezing time, a new dessert freezing tray—the Ray-O-Vac Cremefreezer—is being produced by the French Battery Co. here. In general appearance, the container resembles a covered ice cube tray.

Within the container, and beneath its snap-on cover, is a rectangular metal frame (made from a metal strip less than an inch in width) attached at its top to a bar running the length of the lid, with a handle protruding through the latter at the end of the tray.

A pull on the bar slides the rectangular frame along the bottom and sides of the tray for the entire length of the container, to shave away the frozen mixture from the tray's sides and bottom, break up the frozen particles, and gives the mixture a smoother texture, the designers claim.

The Cremefreezer is available in two models. Model A is 5¼ in. wide, 2⅛ in. high, and 10⅞ in deep. Model B is 4¼ in. wide, 3-3/16 in. high, and 10 in. deep. The freezing trays may be used in practically all makes of electric refrigerators, according to the manufacturer.

Dealer price of the Cremefreezer is $1.63. List price is $2.50. Both models have an anodic finish.

NEW ENGLAND AGENT NAMED FOR REPUBLIC STEEL

YOUNGSTOWN, Ohio—J. E. McFate, formerly associated with Jones & Laughlin Steel Corp., has been appointed sales representative of Republic Steel Corp., in the New England territory. Mr McFate's headquarters will be in Boston.

HIERGESELL BROTHERS DESIGN NEW THERMO-REGULATOR

PHILADELPHIA—A new mercury type thermo-regulator has just been announced by Hiergesell Brothers here. The new instrument employs the expansion of a column of mercury to open the contacts which control a heating or refrigerating system. The designers claim a sensitivity of one tenth of one degree Fahrenheit by means of a thin capillary tube of mercury. The instrument has a range of 0 to 300° F. It is built for operation with an electrical relay.

The manufacturer claims that the thermo-regulator is suited to the control of low-temperature refrigeration installations such as ice cream hardening and cold storage.

SERVEL INTRODUCES 14-CU. FT. HERMETIC

EVANSVILLE, Ind.—Designed to meet demands for a package refrigerator adaptable for light commercial service, a new 14 cu. ft. electric refrigerator is being introduced by Servel Sales, Inc.

The new model SB-14 unit has a net food storage capacity of 13.9 cu. ft. (Nema specifications), with a gross capacity of 15.2 cu. ft. Its f.o.b. factory list price is $460.

Model SB-14 is equipped with two doors, and exterior dimensions is 45⅝ in. wide, 31⅝ in. deep, and 67¼ in. high. Inside dimensions of the liner are: width, 37⅛ in.; depth, 18⅝ in.; and height, 37½ in.

Its seven shelves have a total area of 26 sq. ft. It is equipped with eight ice cube trays which produce 96 ice cubes at one freezing. The condensing unit is powered by a 1/6-hp. capacitor motor. Net weight of the new model is 778 lbs. Model SB-14 has a pyroxylin finish.

YORK PLANS NEW LINE OF MACHINES USING F-12

YORK, Pa.—York Ice Machinery Corp. plans to introduce a new line of small tonnage commercial refrigerating machines, using the refrigerant F-12, in the near future, according to W. S. Shipley, president.

In the process of development are several types of cabinet coolers and air-conditioning units for domestic use, small stores, and individual offices.

After tests and observations from a number of model installations made during the past season in various sections of the country, this equipment will be added to the company's present equipment for industrial and comfort air conditioning and comfort cooling, to be merchandised through the commercial division outlets early next year.

Electrical Controls Are Discussed By G. E. Man

LOS ANGELES—"Electrical Controls for Refrigeration Equipment" was the subject of a talk by H. K. Winterer of General Electric Co., given before the Los Angeles section of the American Society of Refrigerating Engineers on Oct. 10.

W. L. Holladay introduced the speaker, who opened his address with a brief discussion of motor design, using graphs of starting and running torque, and current, to illustrate his remarks.

"If motors are operated without fuses," he said, "nothing will prevent them from burning up when overload conditions are encountered. Fuses are used primarily to protect the wiring, and a motor can easily burn up on a fuse large enough to hold the starting current."

Mr. Winterer explained that early con-

(Concluded on Page 2, Column 4)

FRIGIDAIRE MEN ADDRESS S.A.E. ON TRUCK PROGRESS

Williams, Carl Explain Refrigerated Truck Problems

TORONTO—Refrigerating engineers' views of refrigerated truck developments were given to automotive engineers by H. M. Williams and J. W. Carl, Frigidaire Corp., before the Transportation Meeting of the Society of Automotive Engineers, Oct. 4 to 6. These two men described the problems affecting progress in refrigerated truck design, and told of recent developments which are solving those problems.

"Regardless of the kind or amount of produce being transported, the refrigeration problems are fundamentally the same," the Frigidaire men said. "Refrigeration is required to overcome heat leakage of the truck body, losses due to opening of doors, and to maintain proper temperature of the material being transported.

"The cost, weight, and capacity of portable equipment demand efficient body construction and insulation, and the avoidance of unnecessary losses of refrigeration due to door openings and the loading of warm materials. Articles being transported should be cooled to the desired temperature before being moved.

Body Construction

"The construction of refrigerated bodies requires that the quantity and type of insulation be given careful consideration. Best practice calls for 6 in. of corkboard or its equivalent for 0°, 5 in. for 30° F., 4 in. for 40° F., 3 in. for 50°, and 2 in. for 60° F. body temperature.

"The choice of insulating material must depend on its insulating quality; its form, in connection with the body design and construction; and ease of protection against moisture.

Insulating Materials

"Many good insulating materials are available on the market, and their insulating factors are easily and reliably obtained. These materials are furnished in block form, which have considerable rigidity, and in blankets which are easily applied but have no structural strength.

"Most materials utilize the well-known principle of insulation based on confined air cells. Aluminum foil utilizes a new principle of insulation, namely, that of reflection. This material is efficient and will be widely used on account of its light weight," they predicted.

"Regardless of the material used for insulation, it is very important that it be sealed, both inside and out, so that moisture cannot enter and destroy the construction and insulating properties. Insulation used in the floor must be

(Concluded on Page 2, Column 1)

BUFFALO FORGE DESIGNS ICE TYPE ROOM COOLER

BUFFALO—Recently introduced by the Buffalo Forge Co. here, is a new ice-consuming portable room cooler. The equipment is built into a furniture steel cabinet 42 in. wide, 20 in. deep, and 46 in. high, finished in walnut or mahogany. The cabinet is mounted on rubber-tired, ball-bearing casters.

Air to be cooled is drawn in through a grille in the side of the cabinet and, after passing through the cooling compartment, is discharged upward through a grille in the cabinet top. The cooler holds 300 lbs. of ice, and reduces the temperature of a room from 10 to 20° F., depending upon the room size and temperature conditions. An ice charge lasts from seven to ten hours, the designers state.

COAST GUARD SHIP SERVED BY WESTINGHOUSE MODEL

NEW HAVEN, Conn.—Westinghouse refrigerators are doing their bit in making the quarters of the U. S. coast guardsmen more comfortable on board the *Davis*. Recently the Connecticut Electric Refrigerating Co. make an installation in the *Davis*, a former U. S. destroyer, converted for coast guard work.

Frigidaire Men Tell Automotive Society About Refrigerated Trucks

(Concluded from Page 1, Column 5)

capable of supporting the load or be so protected that it will not be crushed.

"The floor may be of hardwood or wood covered with metal. When considerable moisture is present, the sealed metal covering is more desirable, as it will stand more wear and will not retain objectionable odors. It is well to provide a drain in the floor to facilitate cleaning. Since cold air drops to the floor, it is advisable to have all drains fitted with a liquid trap or seal.

"The inside walls should be constructed of metal or odorless lumber, since such articles as milk, butter, and cheese readily absorb odors. Wood in meat trucks rapidly acquires the odor of smoked products. The outside walls should be made of ply-wood, ply-metal, or metal. All of these materials have been satisfactorily used. The important feature throughout the body construction is to prevent any direct metallic contact between the refrigerated space and the outside atmosphere.

Adequate Insulation in Top

"Allowance for the full amount of insulation should be made in building the top. If the top is crowned, the extra inch or so available should be insulated. The top is exposed to the direct rays of the sun, and temperatures as high as 140° F. have been found on this surface. Coverings having a high reflective value are quite desirable.

"Careful attention must be given to the construction and number of doors. The very minimum of doors and openings should be used. Every door added means a loss of refrigeration; gaskets flatten, latches loosen, hinges sag, and doors are often left open unnecessarily.

"Care must be used to break all metal contacts between the inside and outside of the door by proper hardware construction. Such contacts cause sweating which results in corrosion and disintegration. The finest looking bodies are marred by rust streaks appearing around the door. The use of nonrusting metals is recommended.

"In the case of low-temperature bodies, provision should be made to prevent water running into the top of the door which will tend to freeze it closed.

"Provision should be made for the mounting of ice containers or refrigerating coils at the time the body is designed. The exact type of coil hangers or supports should be known so that their location can be definitely planned and rigid mountings assured.

Refrigerating Systems

"The oldest type of refrigerating system used in trucks utilizes ice or salt and ice. The ice is either crushed or used in blocks; it may be distributed in the material refrigerated or placed in containers.

"Pans are often built into various parts of the body and utilize fins or other devices to increase the surface. The moisture formed is often objectionable, as it may seep into the insulation and cause deterioration. Whenever it is necessary to use salt to obtain lower temperatures, the resulting brine is objectionable as it corrodes metal parts, shortening their life.

"Containers filled with eutectic solutions are used for truck refrigeration. These systems present certain advantages and have numerous applications, although they are limited on account of the necessity of precooling and handling charges.

"More recently, solid carbon dioxide has come into much prominence in truck refrigeration. It offers advantages over ice in that much lower temperatures are attainable. It has twice the cooling value per pound and its change of state in cooling is from solid to gas instead of from solid to liquid.

"The fact that it produces such a low temperature makes the control of body temperatures difficult.

"Many types of construction have been used to distribute and control the refrigeration effect. The most recent system utilizes the double refrigerant principle by which the solid carbon dioxide is used to condense a secondary refrigerant such as methyl chloride or dichlorodifluoromethane. The secondary refrigerant is used to refrigerate the body and contents, its rate of cooling being controlled by suitable valves. Present prices of solid carbon dioxide render its use rather expensive.

Trucks Precooled at Plant

"Some manufacturers which have large refrigerating plants use precooling systems. Brine or refrigerant is circulated through the coils in the body during the time the truck is parked in the garage. The evaporator may be either exposed inside the body or imbedded in a brine tank or eutectic solution.

"If it is inconvenient to connect to the factory refrigerating system, a small compressor can be used. There is no attempt to control the temperature. These methods depend on a well-constructed body and are good for short hauls.

"Many mechanical methods of refrigeration have been used. They may be classified according to the method used to drive the compressor, as follows: (a) electric, (b) power 'take-off,' (c) separate gasoline engine.

Electric Drives

"The simplest form of electric drive consists of connecting the compressor through a motor to the storage battery of an electric truck. Gasoline-driven trucks have been equipped with storage batteries to drive the compressor. Batteries, however, are heavy, expensive, require continuous service and attention, and cause difficulty from voltage variations.

"The truck engine has been used to drive directly an electric generator to supply energy for a motor to drive the compressor. The power take-off has also been used to drive the generator. Speed variation seriously affects the generator voltage and elaborate controls are necessary to overcome this difficulty. Automatic voltage regulators are usually complicated and require expert service.

"The power take-off method is utilized to drive the compressor direct either through belts or gears. This method does not permit control of the compressor speed which in turn varies the capacity of the compressor. It is not possible to control the amount of refrigeration when such a variable is present.

"A hydraulic device is now under development which will deliver a constant speed regardless of the driving speed. Such a device if reasonably free from service should afford a satisfactory compressor drive from the power take-off.

"Another somewhat allied scheme consists of the use of a hydraulic unit. This system provides a variable stroke pump delivering a constant volume of oil to a fluid motor which drives the compressor. This system offers possibilities, but so far has been found too expensive and not practical," they explained.

Gas Engine Drives

"The unit gasoline engine drive incorporates a simple air-cooled or water-cooled gasoline engine for motive power. The engine may be belted or directly coupled to the compressor, making a compact refrigeration unit, which is independent of any other part of the truck.

"One-, two-, and four-cylinder, four-cycle engines are being used. Most of these engines use magneto ignition and hand or electric starters. Although the units are heavy they are inexpensive, the cost of operation is low, and service is readily available.

"Regardless of the simplicity of the engine and compressor, there are problems to be solved in the combination. Vibration causes trouble and development work is necessary to determine a suitable type of mounting.

"The drive is still subject to investigation, as the power characteristics of the engine and compressor are unlike those encountered with other types of service. Close cooperation between body builders, engine and compressor manufacturers will be needed for a satisfactory solution.

Electric Operation at Night

"Many mechanical units may be equipped with an auxiliary motor so that the compressor may be operated from a power circuit during standover periods. This motor is not essential on gasoline drives where an exhaust system is available or where the exhaust gases are not objectionable.

"Automatic controls are used on many units, although the simpler type, incorporating the low-temperature cut-out seems to be most successful. The full automatic unit has been tried again and again with repeated failure due to the delicate devices and lack of understanding on the part of the user.

"The refrigerating unit has been located in many positions on the truck. It has been placed on the top, the front, the rear, along the sides, underneath, and across the body either in the front or rear. Wherever it is placed, the compartment must be large enough so that the unit is accessible.

"With the unit located across the body, a free circulation of air is possible. Large volumes of air are required, as for instance, when using a 1½-hp. air-cooled compressor for low-temperature work, approximately 15,000 cu. ft. of air per minute are necessary to dissipate the condenser heat in addition to that required to cool the engine.

Dry Expansion Usual

"Evaporators of the dry expansion type are generally used. However, flooded evaporators properly located in the body are giving satisfactory service. If the evaporator is large it should be installed when the body is being built or a false opening provided for its installation at a later date. One large section is more desirable than several small sections which may otherwise be required.

"Evaporators should be made of sturdy materials which will resist corrosion. The evaporator must be protected by suitable baffles which will permit the free circulation of air. Refrigeration cannot be effective unless air circulation is permitted. This point is often forgotten when transporting products in boxes that can be packed close together.

"Proper drain pans should be installed under the evaporators so that drippage will not damage the products. Regular defrosting of the evaporators increases their efficiency. Ice cream bodies are rarely defrosted, but the snow formation should be removed by frequent scraping.

"Control of the refrigerant is of utmost importance. The liquid must be retained in its proper place in the system by suitable location of the expansion valve and its control. Spillage of liquid from the evaporator into the crankcase must be avoided," they pointed out in conclusion.

New Sherbet Freezer

French Battery Co.'s new freezer for ice cream, sherbets, etc. See story on page 1.

G. E. MAN DISCUSSES ELECTRICAL CONTROLS

(Concluded from Page 1, Column 4)

trol switches were of the dash pot type, and failed to function properly with continuous service. Bimetal strips were then tried, but they warped and broke contact under damaging overload.

Carbon and copper contacts were tested for their ability to make contacts properly, but the low conductivity of carbon caused trouble, the speaker said.

"Metallic contacts on early switches, generally made of copper, were very short lived because of their welding at the point of contact—the theory being that the wipe joint would be somewhat self-cleaning, and would greatly decrease the possibility of welding," Mr. Winterer said.

Considerable experimenting with this type of contact followed, the amount of slip and the spring pressure being varied in order to increase the life of the switch, according to the speaker. Careful studies of older type switches on arc formation led to the present type of switch, in which all contacts are double, and are mounted at either end of a bar which is loosely fastened to the moving element.

Contacts themselves are made of special arc-resisting metals, and damage from arcing has been reduced to a minimum, the General Electric man stated.

The speaker then dwelt briefly upon the design of the capacitor motor, which, he said, was developed to eliminate the objectionable noise of the brush-raising mechanism in the repulsion induction type.

"In the capacitor motor, it is necessary to use one winding for starting, and another for running," Mr. Winterer explained, and then described the several methods used in accomplishing the change.

"Latest development is a magnetic switch," he said. "When the current is high, as in starting, magnetism holds the switch in one position, and as the motor picks up speed and the current decreases, the decreased magnetism allows the switch to move to the running position."

PREVIOUS MEETING

LOS ANGELES—Members of the Los Angeles section of the A. S. R. E. opened their 1932-1933 season last month with an inspection of the plant of the Liquid Carbonic Pacific Corp.

The inspection trip brought out information on the manufacture and uses of solid carbon dioxide. The group was divided into two sections, Fred Aalbue, plant manager, acting as instructor for one section, while B. P. Carpenter, sales manager, handled the second section.

A feature of this plant is the fact that it is operated by steam, and that the flue gases from the boilers provide all of the CO_2 gas necessary for the plant's output. A special European coke with low sulphur content is used, being laid down at the plant at lower cost than domestic cokes.

Following the trip through the plant, Mr. Carpenter answered numerous questions relative to the properties and uses of solid carbon dioxide, after which the group was shown through the soda fountain plant where Liquid Carbonic soda fountains for Pacific Coast shipment are manufactured.

CORRECTION

M. L. Steiner, whose activities in organizing a new independent service company in Portsmouth, Ohio, were reported in the Sept. 21 issue of ELECTRIC REFRIGERATION NEWS, has just pointed out that his name was incorrectly spelled Sleiner instead of Steiner in the announcement.

Gibson Technician

H. E. ROSEBROOK

* * *

ROSEBROOK JOINS GIBSON ENGINEERING DEPARTMENT

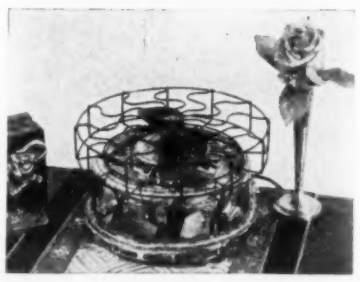
GREENVILLE, Mich.—H. E. Rosebrook has accepted a position in the engineering department of the Gibson Electric Refrigerator Corp.

Mr. Rosebrook comes from Springfield, Mass., where he was connected with Westinghouse for several years. He is a graduate of Ohio Northern university at Ada, Ohio.

NEW OZONATOR ANNOUNCED BY JEFFERSON ELECTRIC

BELLWOOD, Ill.—Jefferson Electric Co. here has just introduced a new air-conditioning accessory known as the "Ozonator." It generates ozone which is circulated throughout a room by a two-blade propellor type fan mounted on the top. Designers claim that it will purify the air of enclosed rooms, as well as destroy odors from cigars and cigarettes, musty clothes, cooking, etc.

Room Ozonator

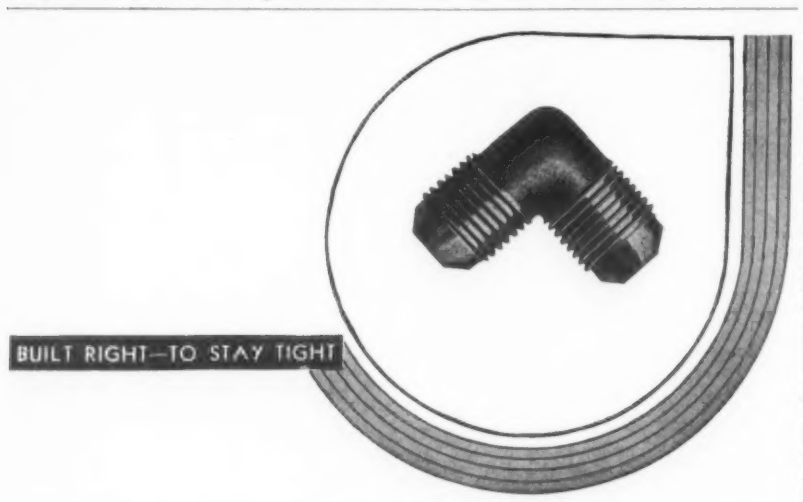


Jefferson's ozonator on a table.

Air-Conditioned Church But It Only Had Circulation

DETROIT—When members of the Christ Evangelical Lutheran church on Philadelphia Ave. here boasted that their church was equipped with an air-conditioning system, a reporter went scurrying to see the edifice and learn the make of the equipment.

He found that what church attendants had termed an "air-conditioning system" was in reality a No. 6 Sirocco fan, manufactured by the American Blower Corp., which blows air into the church auditorium through 50 mushroom ventilators on the floor.



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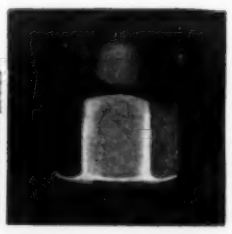

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Saunders Describes Erecting Methods For Structural Insulation

(Concluded from Page 1, Column 2)

operate successfully without sufficient thickness of insulation, but unless this insulation is of the proper kind to protect the chamber from both air and water, it will not be efficient." Protection must be given, the chemist said, both on the room side and the wall side of every room.

He quoted W. Brown, of the Reeve, MacFarlane Co., Ltd., England, as saying that moisture in insulating walls is caused by the fact that the cold air in the chamber tends to stay at the bottom of the room, causing a partial vacuum at the top of the chamber, so that pressure from the outside atmosphere forces water into the wall.

This moisture can decrease efficiency from 4 to 40 per cent, depending on the type of wallboard used, he declared.

Mr. Saunders then flashed upon the screen a cut of a recommended type of insulation for a storage room. The example was of a "ribbon" type job which differs from the standard, or envelope type insulation in that the insulating board is broken at each floor level, instead of running all the way from the ground to the roof.

Ribbon Type Insulation

Then, instead of having a whole ceiling of corkboard or other insulation in each room, a ribbon of two layers of insulation is run around the edge of the ceiling. The first slab of this insulation goes 6 ft. into the room, the second 5 ft.

The advantage of this type of construction, according to Mr. Saunders, is that the movement of the building is taken up in the open space of the ceiling, and there is no shearing force to rip apart the two layers. Likewise, the wall boards for each room move as a unit, and therefore do not rip apart or blister.

Mr. Saunders then gave his figures for the proper thickness of insulation in a refrigerated room. If the temperature will not fall below 35° F., he said 6 in. will suffice. With 7 in. of insulation, the temperature can safely be lowered to 25° F., and if the temperature is to be lower than that, 8 in. are necessary.

The ribbon type of insulation construction is not new, he reported, having been used for some time in the southwest, where it was abandoned because moisture condensed on the edge of the ribbon, and rotted inwards. This has been eliminated in the last few years, Mr. Saunders claimed, by properly damp-proofing the wallboard.

At this point Mr. Herter interrupted the speaker to point out that if the insulation were put outside the concrete walls of the building, the insulating value of the concrete could be used. Mr. Saunders admitted this, but said that in the only building where he had seen this tried, the insulating board would not hold plaster or stucco, and soon rotted.

Erection Methods

In setting up a cold chamber, Mr. Saunders said, the first layer of wall insulation goes up. Then the steel plates are laid, and the concrete poured on them. Scoring the insulating board to make it hold the concrete is unnecessary, he stated, because the pores in the insulant provide sufficient surface for the concrete to adhere. The waterproofing material, asphalt, which surfaces the wallboard, is also adhesive.

"After the concrete has hardened," he said, "it must be carefully tested to see that it is flush. If not, the inner wallboard will not stick to it. Brick and hollow tile walls are never flush, due to the mortar, and must be covered with Portland cement."

Then the concrete must be damp-proofed. At this point in his speech, Mr. Saunders discussed the properties of asphalt emulsion.

"An asphalt solution," he said, "is impossible, as no solvent for asphalt has ever been found. For this reason, asphalt cutbacks will not work as waterproofers, because the asphalt comes out of the solvent changed, and minus some of its more valuable properties."

Also, a quick-drying liquid, such as is used in "cutback asphalt solutions," blows tiny holes through the asphalt coating in its evaporation, and thus impairs the waterproofing effect, he stated. For this reason, he advocates the use of asphalt emulsion, which is slow drying, having a water base.

A different emulsion than the regular one must be used on this outer wall, Mr. Saunders explained, as the temperature it must withstand is higher than if it were used nearer the cold chamber.

The lower the melting point of asphalt, the speaker said, the higher its efficiency will be in providing damp-proofing and insulation, so that the emulsion used near the outer wall should not also go on in the inner layers.

Melting Points of Asphalt

The most efficient asphalt, the chemist said, melts at 115° F. Since this temperature might easily be reached on an outer wall or a roof, other asphalts are available with melting points of 120 and 180° F.

The next layer of wall insulation is fastened on with 180° asphalt. The wallboard is dipped into a pan of emulsion heated to 380° F., and is pressed firmly against the wall, and held a few seconds until the asphalt cools. It is undesirable to pat the wallboard to make it set, Mr. Saunders said.

After this stage, the first layer of floor insulation is started. Then the second inside wall layer is put up, and the floor is finished.

A minor point, but a very important one in putting up the wallboards was explained by Mr. Saunders. He said that the wooden skewers which hold the second layer of cork to the first must be driven at an angle, and must not come within an inch of the outside wall. He showed a picture in which the skewers had touched the outside wall. As a result, the wood transmitted moisture and warmth through the corkboard, spots of frost developed and the insulating boards were forced off.

Book Review

"AIR CONDITIONING FOR COMFORT"

Author: Samuel R. Lewis, past president, American Society of Heating & Ventilating Engineers. Publisher: Engineering Publications, Inc. Pages: 224. Date of publication: 1932. Price: $2.00.

WIDESPREAD, and constantly increasing interest in the subject of air conditioning for homes, small stores, shops, restaurants, etc., was responsible for issuance of this book.

In its 244 interesting pages, it treats of both the theory and use of air conditioning as applied to the types of installations mentioned. It takes the reader logically through the fundamental data required in designing a system of air conditioning, shows how the formulae developed are applied in making necessary calculations, and finally presents calculations required for installations in two residences and a restaurant.

It is indicative of the author's practical viewpoint that he has insisted throughout the book that "heating systems are considered in this work along with cooling systems, because of the very close relation between the two, and because it appears inevitable that the best cooling systems of the future will be those, the designing of which was borne in mind when the heating system, with which it coordinates, was designed."

There is probably no better way of outlining the scope of the book's contents for readers of this review than listing subjects treated in the volume's 12 chapters.

They are: Explanation of Terminology; Instruments of Service in Air Conditioning; Relation of the Human Body to Air Conditioning; Influence of the Type of Heating System Upon Air Conditioning; Heat Transmission Through Building Materials; Calculations for Air Conditioning Requirements.

Sunshine, Evaporation, Air Leakage, and Lighting; Air Distribution Within the Rooms of Cooling Systems; Controlling the Temperature in Air-Conditioning Systems; Water Circulation in Heating and Cooling Systems; Air Ducts in Heating and Cooling Systems; Computations for an Actual Design.

Every type of equipment now available is touched upon, and various methods of humidification, dehumidification, cooling, filtering, etc., are described. Chemical processes of extracting moisture, together with use of ice and other refrigerants are adequately covered.

All tables and formulae for calculating heat losses, friction in pipes and ducts, for conversion of ducts from round to rectangular, for calculating sizes and power, etc., are to be found in the book, as are detailed drawings of equipment and enclosures for which calculations are made.

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Refrigeration—An Aid To Science

Westinghouse refrigeration contributes to the general research conducted by Doctors Martin and McNeill, Louisville, Ky. Culture media, laboratory reagents, and biologicals are preserved.

WESTINGHOUSE INSTALLED IN MEDICAL LAB

LOUISVILLE, Ky.—Science has again enlisted the aid of electric refrigeration to assist in its research work, with the purchase of a Westinghouse electric refrigerator for the laboratory of Doctors Martin and McNeill of this city.

Men working in the laboratory state that the electric refrigerator is used for the icebox incubation in the Wasserman test, for the storage of specimens, culture media, laboratory reagents, and biologicals, and for general laboratory purposes.

GENERAL ELECTRIC DESIGNS NEW PHOTO RELAY

SCHENECTADY, N. Y.—A new low-priced photoelectric relay has been announced by the General Electric Co. It is applicable to installations where practically complete interception of the light beam is made, since changes of light intensity of at least 50 per cent are necessary for successful operation.

The unit is particularly adaptable to counting applications inasmuch as the sensitive relay contacts will handle directly current for the usual types of magnetic counters.

NEW PRODUCTS TOPIC AT SOCIETY MEETING

(Concluded from Page 1, Column 1)

search, National Malleable & Steel Castings Co., was chairman at another.

"Any company that is not keeping up in development is riding for a fall; development is a practical necessity for any company that decides to stay in business," declared Dr. Zay Jeffries, consulting metallurgist, Aluminum Co. of America, and General Electric Co.

Gordon Armstrong, Youngstown Pressed Steel Co., Warren, Ohio, declared that ingenuity is one of the essentials of new products, the other elements being raw material and labor. In a presentation of the subject of marketing the new product, he stressed the importance of eye value or appearance, which, he said, sold many products.

Practical steps in product development were discussed by D. G. Smellie, director of development and design, Hoover Co., North Canton, Ohio, who traced the various steps in bringing out a new product in his company's plant up to the time it is released for production.

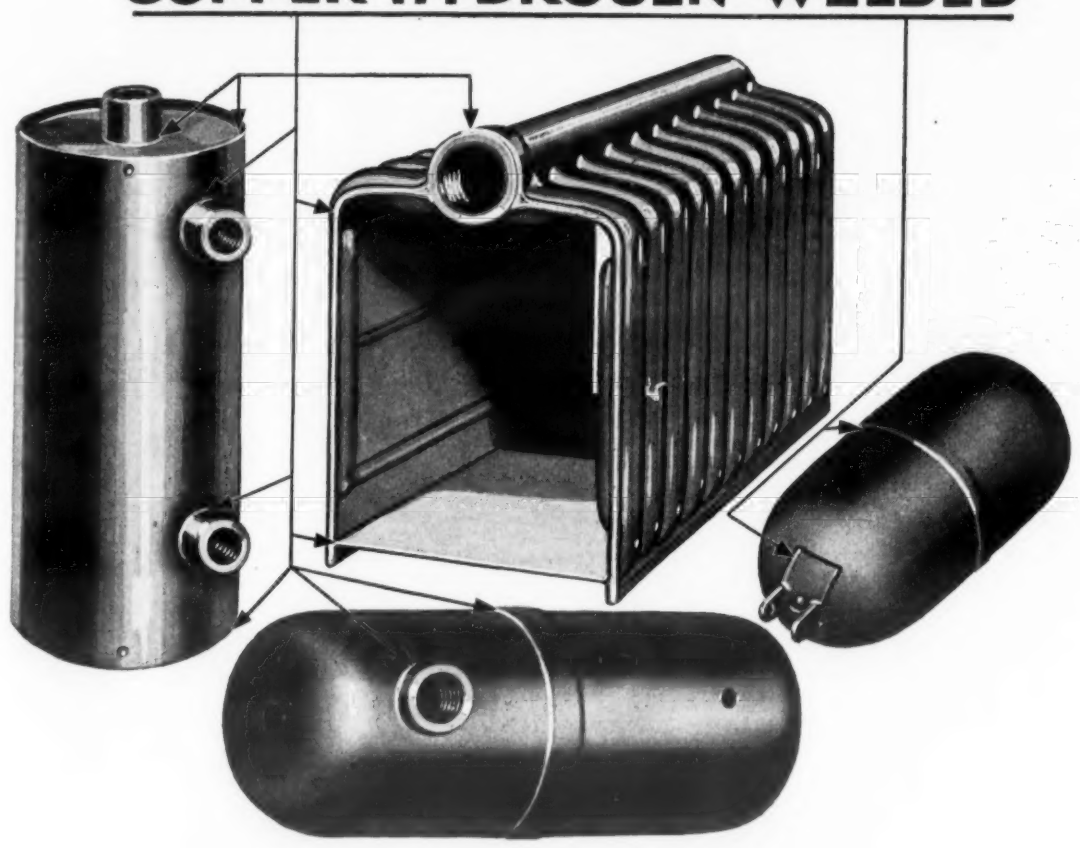
He stressed the necessity of teamwork between different departments, and the important position the development engineer occupies in getting a new product ready for the market.

Stages in the development of new electrical equipment were outlined by N. R. Richardson, assistant works manager, Electric Controller & Mfg. Co., Cleveland.

A review of the various steps taken in designing and bringing out a new automobile, usually taking more than a year in time, was given by Floyd F. Kishline, assistant chief engineer, Graham-Paige Motors Corp., Detroit.

The story of the bringing out, by his company, of a new electric clock to retail for $1, was graphically told by A. Buchenberg, vice president in charge of engineering, Electric Auto-Light Co.

COPPER HYDROGEN WELDED



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MARKET FOR POWER IN AIR CONDITIONING SURVEYED BY N.E.L.A.

NEW YORK CITY—An available power demand of 2,200,000 hp. exists in the potential electrical load for commercial and industrial air conditioning according to estimates of the general power section of the National Electric Light Association which has just issued a special report on "Marketing Air Conditioning." H. C. Thuerk, Utility Management Corp., New York City, is chairman of the committee.

This figure is a conservative estimate, the report states, and does not include allowances for residential installations. It is based on the installation of equipment to produce 1,315,000 tons of refrigeration, together with the necessary auxiliaries.

This amount of refrigeration is a total of the following individual group estimates:

	Tons of Refrigeration
Industrials	500,000
Theaters	225,000
Stores	120,000
Public Buildings	20,000
Restaurants	150,000
Miscellaneous	300,000
Total	1,315,000

The figure of 2,200,000 hp. of prospective air-conditioning equipment would mean an increased winter load of about 485,000 kw. with a consumption of about 900,000 kwh., and an increased summer load of about 1,450,000 kw. with a consumption of about 850,000,000 kwh., giving a total yearly consumption to be expected of approximately 1,750,000,000 kwh.

The report cites the findings of a large power company in the Middle Atlantic states which showed that the total potential air-conditioning load available from industrial and commercial customers is equal to about 18 per cent of the total connected load of those two classes of customers.

The survey found further that while the annual load factor of the total load would be somewhat low, nevertheless about 75 per cent of the demand and somewhat less than 50 per cent of the current consumption is due to the refrigeration and auxiliary equipment which is used during the summer months, while about 25 per cent of the demand and over 50 per cent of the energy consumption would be spread over the entire year.

Quoting from the newly issued N.E.L.A. report:

"The development of air conditioning offers the prospect of an extremely large and desirable power load to the electric power companies. The load has two very desirable features.

"The ventilating fans and air washing equipment are in operation during the entire year with consequent high annual load factor, and the equipment used for cooling and dehumidifying, which consists primarily of refrigeration and auxiliaries, is used only during the summer months when the load on the system of the average electric power company is somewhat lower than in the winter months, and there is idle capacity for this load."

According to the latest figures available, industrial air conditioning represents at the present time an electric power demand of approximately 75,000 hp. now installed in 3,000 factories in 200 industries in the United States.

In addition to this, as stated recently by one of the leading manufacturers of air-conditioning equipment, it is estimated that more than 75,000 tons of refrigeration are at present used in the United States in connection with air conditioning for human comfort, requiring a maximum power demand of probably over 90,000 hp.

Present Connected Load 210,000 hp.

This refrigeration load, together with the load of the fans and other auxiliaries necessary, probably means a power requirement in the neighborhood of 135,000 hp.

"Thus, we have an existing load in this new and growing field for the application of electric power of over 210,000 hp., which probably represents, with average use, the sale of about 167,000,000 kwh. annually by electric power companies."

The report next describes a number of existing and commercial installations, showing the conditions which made air conditioning a sound economic investment, and analyzing the power requirements.

An air-conditioning installation in a Philadelphia cigar factory was cited as typical of large industrial plants.

This plant was erected with air conditioning incorporated in the initial design. Two inches of cork insulation are placed in all walls and the building is equipped with double windows throughout. These departures from standard construction were deemed advisable because of the fact that 72 degrees wet bulb temperature and 70 per cent relative humidity must be maintained at all times.

The building is nine stories high and has a volume of approximately 2,000,000 cu. ft. A compressor unit located in the basement supplies the refrigerant to two air washer conditioners.

One air washer is located in the basement and supplies the first 4 floors, the other is located on the ninth floor and supplies from the fifth to the eighth floor.

Supply and return ducts are employed for both conditioned air and the air returned to the air washer units for recirculation after it has been reconditioned. The ninth floor is a machinery floor and is not conditioned. About 250,000 cu. ft. per minute is supplied to the conditioned area. The electrical load is as follows:

	Hp.
Compressor and Auxiliaries	152
Pumps	15
Fans	110
Cooling Tower Pump	30
Total	307

The maximum demand is 215 kw. and the approximate annual consumption is 880,000 kwh.

When this factory is operated at full capacity it produces approximately 800,000 cigars a day.

In a cotton and silk products mill air conditioning required an investment of $61,000 but saves over $14,000 a year. A plant producing effervescent salts installed air conditioning which required an investment of $36,000 and saved approximately $25,000 a year. Air conditioning in a cigar plant required an investment of $34,000 for an annual saving of $29,000.

"Where air conditioning is used, industrial plants can be located where economic conditions are favorable without regard for climatic conditions," the report points out. "Plants whose operating conditions require definite climatic conditions have considerable lost production time when these conditions are not right.

"This means that when they can only operate on days when conditions are proper, they must increase their investment in production machinery to obtain a definite annual output."

The rayon industry is a type of industrial plant in this class, and one manufacturer found that he increased his production 27 per cent when air-conditioning equipment was installed.

A cigarette manufacturer increased his production 400 per cent after air-conditioning equipment was installed due to the increased output of his automatic packing, wrapping, and sealing equipment which would not work properly until proper atmospheric conditions were obtained.

A manufacturer of industrial chemicals has been able to run a department of his plant which manufactures products susceptible to weather conditions, to full capacity since air conditioning was installed. Prior to the installation he was only able to operate this department on an average of 200 days a year, with consequent unproductive overhead during the days it was shut down.

Operating Data on Theatre and Commercial Plants

TABLE I—AIR-CONDITIONING EQUIPMENT AND OPERATION IN THEATERS

No.	No. Seats	Ref. Tons	Connected Load Hp.	Maximum Kw. Demand	Theater Location	Kwh. Consumed	Months Operated	Tons per Seat	Hp. per Seat	Kwh. per Seat	Kwh. per Hp.	Kwh. Seat per Month	Kwh. per Hp. per Month	Hour Use of Demand
1	1,286	...	200	...	N. Y.	83,210	12	...	.156	64.7	416	5.391	34.67	...
2	1,500	102	247.5	151	Okla.	237,200	11	.068	.165	158	960	14.36	87.27	1,570
3	1,700	...	125	...	Mass.	69,232	4	...	.0736	40.8	555	10.2	138.75	...
4	1,733	...	213	...	N. Y.	120,849	12	...	.1230	69 5	566	5.791	47.17	...
5	1,743	...	127	...	Mass.	40,940	4	...	.073	23.5	322	5.875	80.5	...
6	1,847	...	152	...	Mass.	51,860	4	...	.0825	28.1	341	7.025	85.25	...
7	1,960	...	275	...	N. Y.	106,460	12	...	.140	54.3	387	4.525	32.25	...
8	1,962	...	152	...	Mass.	50,360	4	...	.9775	25.6	331	6.40	82.75	...
9	2,000	73	110	63	Kansas	70,160	4	.0365	.055	35.1	640	8.775	160.00	1,110
10	2,000	125	231	205	Okla.	101,110	4	.0625	.1155	50.6	438	12.65	109.50	495
11	2,000	...	295.5	160	Penn.	36,500	4	...	.148	18.3	124	4.575	31.00	216
12	2.060	125	230	168	Penn.	68,430	3	.0607	.1115	33.2	297	11.07	99 00	407
13	2.100	180	357 5	327	Penn.	361,210	5	.0857	.170	172	1,010	34.4	202.00	1,110
14	2.110	150	227.5	155	Penn.	121,530	4½	.0710	.108	57.7	535	12.80	119.00	784
15	2.200	...	312 5	211	Penn.	130,900	5	...	.142	59.5	418	11.90	83.6	620
16	2.300	...	213	...	N. Y.	172,080	12	...	.0925	75	806	6.25	67.17	...
17	2,422	...	320	...	N. Y.	116,132	12	...	.132	48	364	4.00	30.33	...
18	2,562	...	370	...	Mass.	167,400	4	...	.1445	65	453	16.25	113.25	...
19	2,600	77	160	127	Ohio	146,350	4	.0296	.0615	56 3	915	14.075	228.75	1,150
20	2.676	220	428	315	Okla.	402,300	5	.0823	.160	150	940	30.00	188.00	1 280
21	2.907	...	247 5	...	Mass.	177,710	4	...	.085	61	720	15.25	180.00	...
22	2.989	...	325	...	N. Y.	298,670	12	...	.109	100	917	8.33	76.41	...
23	3.150	...	415	...	N. Y.	245,667	12	...	.132	77.7	590	6.475	49.17	...
24	3 200	...	355	...	Mass.	199,400	4	...	.111	62.3	560	15.575	140.00	...
25	3.300	200	363	199	Penn.	98,445	5½	.0605	.110	29.8	271	5.425	49.25	494
26	3.339	360	525	225	Ohio	237,000	5	.108	.157	71	450	14.20	9 00	1,050
27	3,600	...	350	...	Mass.	179,600	4	...	.0972	50	513	12.50	128.25	...
28	3,600	...	500	...	N. Y.	223,820	12	...	.139	62	446	5.167	37.17	...
29	5.000	...	400	...	Mass.	336.100	4	...	.08	67.2	840	16.800	210	...
30	5.624	...	610	...	N. Y.	330,000	12	...	.1085	58.7	541	4.89	45 08	...
Total	77,470	...	8,837	...	...	4,979,725	213	...	...	...	...	...	...	...
Average	2,532	...	294 6	...	...	165,990	7.1	...	.114	64 2	563	9.04	79.3	...

TABLE II—AIR-CONDITIONING EQUIPMENT AND OPERATION IN COMMERCIAL BUILDINGS

No.	Volume Cu. Ft.	Floor Area Sq. Ft.	Ref. Tons	Hp. Connected	Maximum Kw. Demand	Location	Kwh. Consumed	Months Operated	Tons per 1000 Cu. Ft.	Tons per 1000 Sq. Ft.	Hp. Connected 1000 Cu. Ft.	Hp. Connected 1000 Sq. Ft.	Kilowatt Hour 1000 Cu. Ft.	Kilowatt Hour 1000 Sq. Ft.	Kilowatt Hour Per Hp.	Hr. Use of Demand	Kilowatt Hr. per Month 1000 Cu. Ft.	Kilowatt Hr. per Month 1000 Sq. Ft.	Kilowatt Hr. per Month Per Hp.
1	....	15,000	...	100	81	Texas	20,400	12	....	....	....	6.67	....	1,360	204	252	....	113.3	17.0
2	30,417	2,347	15	24.5	14	Kansas	13,900	4	.493	6.4	.805	10.42	457	5,930	568	994	114.2	1,482.5	142.0
3	109,200	7,875	...	18	9	Kansas	9,260	4	...	...	.165	2.29	85	1,175	515	1,030	21.3	293.7	128.7
4	227,000	...	75	131.5	48	Calif.	44,120	6	.33	...	.580	...	194	...	336	920	32.3	...	56.0
5	239,400	12,350	...	31	14	Kansas	19,720	4	...	...	.130	2.51	82	1,600	637	1,410	20.6	400	149.2
6	304,875	18,200	50	100	64	Kansas	66,269	5	.164	2 75	.328	5.50	218	3,640	663	1,034	43.6	728	132.6
7	900,000	...	90	272	210	Calif.	131,547	6	.100	...	.302	...	146	...	484	625	24.4	...	80 7
8	1,200,000	...	100	246	132	Calif.	158,020	6	.0835	...	.205	...	132	...	644	1,200	22.0	...	107.3
9	1,613,700	131,300	150	...	...	N. Y.	80,770	12	.093	1.14	...	...	50	615	...	...	4.2	51	...
10	2,963,000	226,000	600	...	...	Mich.	1,000,000	7	.202	2.65	...	...	338	4,430	...	...	48.3	633	...
DEPARTMENT STORES																			
1	1,794,000	160,000	410	...	...	.....	15,923	12	.228	2.56	...	...	8.9	99.8	...	...	.75	8 3	...
2	156,000	9,250	50	80	50	Ohio	44,000	4	.321	5.40	.513	8.65	282	4,760	550	880	70 5	1,130	137.5
3	138,000	11,700	...	30	20.7	Kansas	14,847	4	...	...	.217	2.58	107.8	1,270	495	717	26.9	317.5	124
RESTAURANTS AND CAFETERIAS																			
1	89,760	...	...	70	54	Penn.	46,659	6	...	...	.780	...	520	...	667	864	86.7	...	111
2	99,000	...	85	113	86	.....	20,258	2	.86	...	1.14	...	204	...	179.5	235	102.0	...	83.75
3	29,700	2,700	14.5	23	17.2	Kansas	23,808	4	.488	5.37	.775	8.52	805	8,830	1,035	1,390	201.25	2,207.5	258.75
4	139,000	12,644	53	...	...	.....	158,000	..	.381	4.19	...	...	1,138	12,500	...	...	...	...	...
HOTELS																			
1	280,000	...	200	300	153	Ohio	209,150	6	.714	...	1.07	...	748	...	695	1,365	124.7	...	116
2	246,000	...	75	200	100	Ohio	138,375	6	.305	...	.813	...	563	...	691.9	1,383.7	93.8	...	115.3

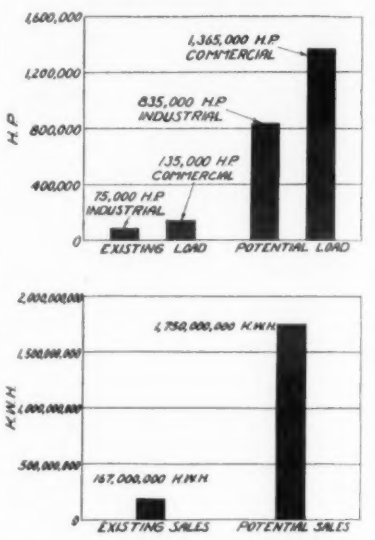
"Air-conditioning equipment is regarded as standard in the large theaters in the country, and at the present time there are over 300 such installations. There are, however, over 4,000 first-class moving picture theaters in the country, and in addition to that a number of legitimate play houses, which do not have air conditioning installed.

"Since most states have laws requiring the installation of ventilating equipment, the additional cost of installing complete air-conditioning equipment is generally not large. The return on this increment investment is, therefore, correspondingly high," according to the N.E.L.A. report.

The theater is the largest user of air conditioning today. It costs from $20 to $30 per seat to install and theater operators find that they can usually return the cost of the installation by the increased patronage over the first summer season after it has been installed unless they are competing with other theaters so equipped.

Stores

Air conditioning has proved its worth in both the small store and the large department store. At the present time there are about 25 department stores equipped with complete air-conditioning equipment. The number of smaller stores equipped with air-conditioning equipment is rapidly increasing due to the comparatively recent development of small, efficient, reasonably priced units for such installations.



"Where such installations have been made the reaction on employes, clientele, and sales has been extremely favorable. There are hundreds of stores in the country whose size and clientele warrant such installations."

An application of comfort conditioning is illustrated by a store merchandising medium-priced ladies' apparel. The store is approximately 30 ft. wide by 60 ft. long by 11 ft. high and has a glass area of 160 sq. ft.

The store is located in a city block exposed only front and back. The compressor is located in the basement and the dry filter, cooling coil type conditioning unit in the store. The unit handles 2,500 cu. ft. per minute of conditioned air.

The electrical load consists of a 1-hp. motor-driven fan, a ½-hp. motor-driven pump, and a 7½-hp. motor-driven compressor. The demand is 6.5 kw. and the consumption 10,200 kwh. per year.

"Since the effect of air conditioning in the department store is a material increase in sales with increase in overhead beyond that due to the system itself, this cost is not only offset by increased sales, but an added attractive return on the investment should be realized annually as well," the report declares.

"An indirect saving in stores with air conditioning installed is the reduction of damage done to clothing which is tried on, and the resulting spoilage or

(Concluded on Page 5, Column 1)

	Cigar Factory	Cigar Factory	Textile Mill
Kwh. per year per kw. of demand	3,100	3,000	8,280
Kwh. per year per cu. ft. of conditioned space	0.44	0.39	0.17
Installation cost per cu. ft. of conditioned space	$0.075	$0.10	$0.02
Installation cost per cu. ft. of air per minute	$0.60	$0.75	$0.23

COMMERCIAL FIELD

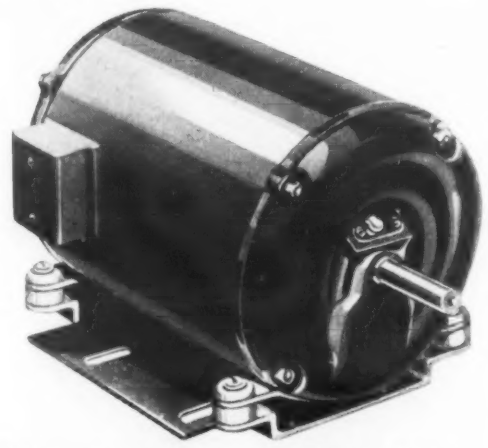
"The best prospects for such air-conditioning installation in this field will probably be found in theaters, stores, restaurants, office buildings, hospitals, hotels, banks, legislative halls, and places of public gathering," the report opines.

"The cost of furnishing conditioned air in this field is small compared with the benefits to be derived. In general, it will be found that in theaters the overall cost including fixed charges is about 1 cent per patron. In department stores it averages about 1 cent per sale, in restaurants less than ¼ cent per meal, and in hotels about 12 cents per day per room."

In banks this cost averages about 3 cents per day per employe. In office buildings 15 cents per day for an office renting for about $1,200 per year covers this expense. This is about $55 per year, which means that less than a 5 per cent increase in rental will take care of the cost of air conditioning.

Built-In!

The capacitor is built inside the motor frame



A New Capacitor Motor Perfected By Howell

The capacitor is built into these newest fractional horsepower motors... It is constructed inside the motor frame... With this development Howell engineers have overcome the greatest objections to this type of motor—the space and appearance factors.

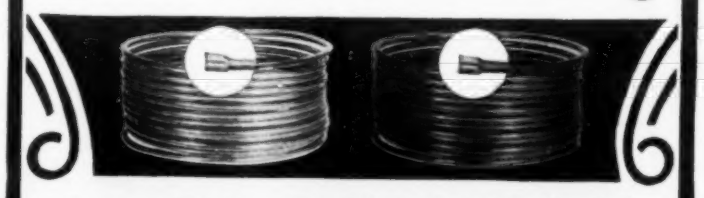
Now you can power your product with a capacitor motor that is compact, light in weight, neat in appearance, quiet in operation. And a motor that has an abundance of power for its rating, high starting torque, high efficiency, high power factor and liberal overload capacity.

Here is the ideal motor for refrigeration applications. Both horizontal and vertical types are available, with rubber or rigid mounting on the horizontal models. Also stators and rotors for built-in equipment.

HOWELL ELECTRIC MOTORS CO.
HOWELL, MICHIGAN

WOLVERINE

Seamless Dehydrated Tubing



Copper-Plain or Tin Plated-Solder Sealed

This highly specialized product is the standard of the industry. Saves time. Saves labor. Saves service cost. Immediate shipments from large stock.

Eastern Sales Office
420 Lexington Ave., New York
Los Angeles Office
1015 East 16th St.
26 Sales Offices

Wolverine Tube Co.
1491 Central Ave.
Detroit
Export Dept.—H. M. Robins Co.
Detroit

N.E.L.A. SURVEYS FIELD OF AIR CONDITIONING

(Concluded from Page 4, Column 5)

cleaning costs due to perspiration stains."

The report views office buildings as another large field, notwithstanding the fact that at present there are less than a dozen such buildings completely equipped with air conditioning.

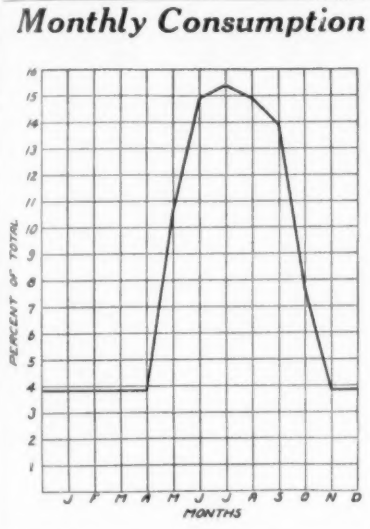
"Owners of air-conditioned buildings find that the inner offices and space on the lower floors, can be rented at rates more nearly approaching those of the upper floors. They find that such installations, combined with adequate lighting, enable the occupants of the lower floors to keep the windows closed at all times to exclude the noise and dust of the street, and make the offices equally desirable in summer and in winter."

The installation in the Norwood building, Austin, Texas, is cited as a typical example of modern office building air conditioning. It is a 15-story structure built of steel, limestone, and marble. Adjoining it is a garage on the roof of which is a clubhouse which connects with the office building by a passageway from the fifth floor.

Conditioned air is distributed at all times through each room and corridor of the office building, and the adjoining clubhouse.

Two carbon dioxide compressors with a combined capacity of 250 tons of refrigeration are installed in the basement. The refrigerant from these units

Monthly Consumption



Monthly consumption of typical air-conditioning installation in Philadelphia, Pa.

is piped to seven air-conditioning units, each unit serving two floors with the exception of the highest one which serves floors 13, 14, and 15. A separate unit serves the clubhouse.

Each unit includes an air washer; a fan with a capacity of 1,100 cu. ft. per minute; a 260-g.p.m. pump; 1,000 sq. ft. of direct expansion coil; and heater surface. The direct expansion coils keep the circulating water at a temperature ranging from 32° to 45° F., depending upon prevailing conditions.

The fan of each unit distributes conditioned air to all offices through ducts concealed in the ceilings. The air is returned to the air washers through louvered doors of the offices, and the corridors of the building. Specially designed air outlets in each room serve about 100 sq. ft. of floor space, or about 900 cu. ft. of room space, and are located just above the office lighting to form a part of the lighting fixture.

Air returned to the washers is mixed with the proper amount of fresh outside air, and the mixture of recirculated and fresh air is passed through a fine mist of cold water in the spray chamber of the washer to clean it, and to reduce the temperature for redelivery to the offices.

The air in the building is completely changed once every eight minutes under normal conditions. Each substation unit is separately controlled by means of thermostats by which the temperature of the air in each unit is maintained within 1° F. of any desired point.

The relative humidity is also automatically controlled and maintained at 55 per cent. The control equipment at each substation unit is controlled in turn by a synchronizing master control by which the temperature of the building is raised or lowered as the outside temperature rises or falls.

A temperature of 12° to 15° F. below the outside temperature is maintained for all outdoor temperature above 85° F. During the heating season the same system of thermostatic control is automatically maintained, the refrigerating system being cut off, and steam turned into the heaters under control to maintain a temperature of about 70° F. with a relative humidity of 55 per cent at all times.

"Only two or three hotels in this country offer their guests the comforts and advantages of air conditioning. Progressive hotel operators, however, realize that the public will soon demand it, and are considering plans for its installation. Those hotels, particularly in the large cities, that do not provide their guests with modern comforts will soon see them go elsewhere where such comforts are provided," the report predicts.

Banks are adopting air conditioning, but up to the present time there are only about a dozen of them so equipped.

The report shows a diagram of the reversed refrigeration cycle as it has been adapted for air conditioning the office building of the Southern California Edison Co., Los Angeles, and briefly traces the operation and possibilities for power consumption in that development.

The booklet concludes with a discussion of a power company's opportunities for load building with air-conditioning equipment on its lines. It urges close cooperation with equipment manufacturers, suggests that utilities install air-conditioning equipment in their own buildings in order to demonstrate its benefits, and proposes that utilities employ specialty salesmen to follow up leads developed by general power salesmen.

Humidity Control Aids Paper Binding

BOSTON—"Moderate and, under some conditions, high relative humidities are desirable in binderies, as control of atmospheric conditions during cutting, folding, and binding operations is just as important as during printing," states a recent book on "Air Conditioning in Printing and Lithographic Plants," published by Parks-Cramer Co. of this city.

"Of the various troubles attributable to lack of humidification or to inadequate humidifying apparatus in binderies, the most serious is cracking or breaking of sheets when folded. Certain special papers have high 'folding endurance' regardless of atmospheric conditions, but in general, the drier the atmosphere, the weaker or more brittle the paper.

"Other common troubles arise from static electricity, and from curling, bulging, and waving of sheets, shrinking or elongating as a result of changing moisture conditions.

"The troublesome effects of static electricity in binderies are also well known. Handling, cutting, and piling are difficult when paper becomes charged. This happens frequently in unhumidified binderies during cold weather.

"While even slight increases in humidity are helpful, the only satisfactory method of avoiding static troubles is by maintaining adequate humidity conditions at all times. From 50 to 65 per cent humidity is desirable at normal room temperatures.

NEW HUMIDIFIER CABINET INTRODUCED BY EMERSON

ST. LOUIS—Emerson Electric Mfg. Co. is introducing a new cabinet humidifier for offices and homes which evaporates six gallons per 24 hours. It operates by means of a four-blade propeller type fan blowing across a series of metal discs which revolve in a bath of water.

The cabinet stands 24½ in. high, 28 in. wide, and 15 in. deep, and is constructed of wood with a walnut exterior finish. Although intended primarily as a portable unit, requiring connection only to an electrical outlet, it can also be installed with a water connection.

The humidifier is priced at $69.50.

The cabinet encloses a rust-proof water reservoir in which a set of 28 metal discs are turned by a spring belt drive from the fan motor. The discs are kept wet constantly by passage through the water in the lower part of the tank, and the air forced between them is both humidified and washed, the designers claim. The discs have a total of about 40 sq. ft. of evaporative surface.

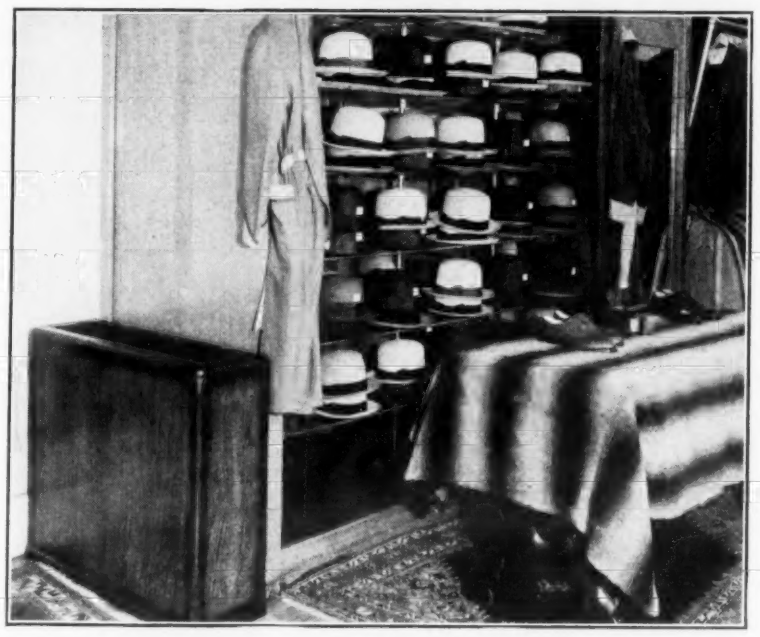
Air is drawn in from an aluminum grille in one side of the cabinet top, and delivered after treatment through a similar grille in the other side of the top surface. The fan forces 16,500 cu. ft. of air per hour through the humidifier.

The cabinet top is hinged for refilling of the water reservoir, and a drain plug is provided in the bottom of the reservoir for cleaning and draining. The motor consumes 40 watts of current, the announcement states.

INCREASE OF MOISTURE CONTENT IN HOMES WITH EMERSON HUMIDIFIERS

Size of Home Humidified	Outside Temp. of	Outside Humidity	Inside Temp. of	Inside Humidity Without Humidifier	Inside Humidity One Quart an Hour	Increase Obtained from Hum'd fier	Percentage Improvement
10,000	0°	80%	72°	22%	40%	18 points	82%
cu. ft.	20°	60%	72°	25%	43%	18 points	72%
(5 rms.)	40°	60%	72°	30%	46%	16 points	54%
15,000	0°	80%	72°	22%	34%	12 points	55%
cu. ft.	20°	60%	72°	25%	37%	12 points	48%
(8 rms.)	40°	60%	72°	30%	43%	13 points	43%
20,000	0°	80%	72°	22%	30%	8 points	37%
cu. ft.	20°	60%	72°	25%	33%	8 points	32%
(10-11 rms.)	40°	60%	72°	30%	38%	8 points	27%

Air-Conditioned Haberdashery



Higgins & Frank, Detroit shop, has year 'round air conditioning.

MEN'S FURNISHING STORE INSTALLS SIROCCO

DETROIT—Two Sirocco unit air conditioners provided cool air for patrons of Higgins & Frank, men's furnisher and clothier here, this last summer, and will be used for heating and humidifying during the winter.

Completely installed for less than $1,700, including a Universal Cooler refrigerating machine, the conditioners maintain an inside temperature of 85° F. when it is 95° F. outside.

TRUSCON STEEL DEVELOPS SOUND MUFFLERS

YOUNGSTOWN, Ohio—To exclude street noises from offices, the Truscon Steel Co. has devised a sound muffler which can be installed in double-hung windows. It uses a principle of sound deflection to keep out noises, at the same time permitting an upward motion of air to enter the room. The device has been named the "Silentaire."

The mufflers may be installed in existing buildings, the announcement states.

NEW POWER STATION BEING BUILT BY G. E.

SCHENECTADY, N. Y.—General Electric Co. is vigorously pushing the construction of its big new power plant here, to cost $4,000,000. The final stack has been put in place and the present prospect is that the plant will be ready for operation next spring.

This new power station uses a mercury boiler and turbine, a General Electric development.

It was decided to finish the project at this time because the costs of construction are lower than in recent years and because work is being provided for General Electric employes as well as for employes of other producers and transportation companies. The total amount of construction work on the plant and the tunnel for carrying the steam pipes to the factory will represent the labor of more than a thousand men for 120 days.

Materials Purchased

Large quantities of materials have been purchased in connection with the building of the plant. These include 5,300,000 lbs. of apparatus (not including mercury-vapor equipment); 4,400,000 lbs. of structural steel; 1,770,000 lbs. of reinforcing steel; and 1,100,000 lbs. of piping.

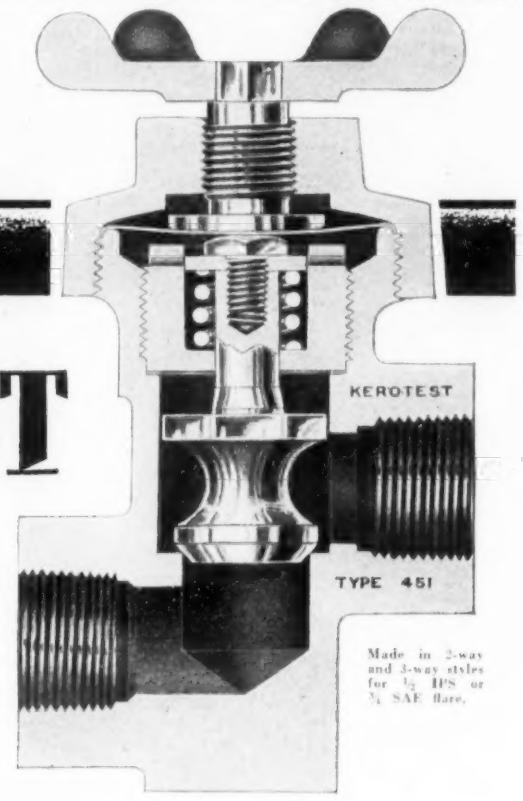
From an engineering viewpoint the power plant is, in several respects, unusual. It will be the first outdoor steam-electric generating plant ever built, General Electric men claim, and it also represents the first instance of coordinating utility and industrial power needs, building immediately into the system the use of a mercury boiler and turbine. The electrical output of the power plant will be fed into the commercial system of the New York Power & Light Corp., while the steam output will be used in the General Electric Schenectady plant.

KEROTEST

Multiple Diaphragm

VALVES

for air conditioning units



Made in 2-way and 3-way styles for ½ IPS or ¾ SAE flare.

(FULL SIZE OPENINGS)

Kerotest Multiple Diaphragm Packless 2-way and 3-way Valves are standard equipment on many of the new air conditioning units now being placed on the market by the leaders in the industry.

Full size openings for ½" pipe or ¾" SAE flare . . . no soldered joints . . . triple metal diaphragm design assures absolute gas or liquid tightness under all pressures, and distinctive metal to metal backseat makes replacement possible without interruption of service or loss of refrigerant . . . all important reasons for Kerotest preference among the leading ventilating and refrigerating engineers throughout the world.

In Kerotest you have a choice of 1, 2 and 3-way valves of large and small sizes—all of which are listed as standard by the Underwriters' Laboratories. Write for descriptive catalog.

KEROTEST MFG. CO., Pittsburgh

KEROTEST

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George Brown & Co., Ltd.
EXPORT DISTRIBUTORS
New York City, N.Y. . 116 Broad Street
Melchior, Armstrong, Dessau Co., Inc.

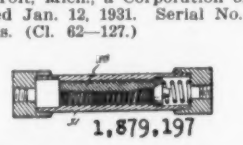
REVIEW OF LATEST PATENTS GRANTED

ISSUED SEPT. 27, 1932

1,879,133. AIR CONDITIONER. Clement L. Dorland, Bakersfield, Calif. Filed Nov. 6, 1931. Serial No. 573,445. 3 Claims. (Cl. 62—199.)

3. In a device of the character described, an outer shell having a forwardly formed guard thereon, an inner shell spaced from said first mentioned shell and having a rearwardly formed guard thereon, said inner shell having a plate secured to one end thereof, a shaft extending through said plate and axially arranged in said inner shell, a pair of fans secured to said shaft at points adjacent said guards, and means for rotating said shaft, a nozzle positioned within said inner shell and adapted to conduct a spray of water against one of said fans, and pipes secured to said plate and having their opposite ends curved and connected to said inner shell at the rear portion forming an air intake.

1,879,197. RESISTOR UNIT FOR REFRIGERATING APPARATUS. Harold A. Greenwald, Detroit, Mich., assignor, by mesne assignments, to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Jan. 12, 1931. Serial No. 508,249. 11 Claims. (Cl. 62—127.)



1,879,197

1. A molding as characterized comprising a relatively flat elongated insulatory base, electrical conductors longitudinally disposed with respect to said base and exposed at the front thereof, and a metallic covering for said base and insulators, said covering having its longitudinal front wall spaced from the said conductors providing therewith a continuous channel and said channel being downwardly open with the opening of constant width for receiving and holding removable connectors at any desired longitudinal position.

1,879,241. REFRIGERATED CONTAINER. John W. Hill, Milwaukee, Wis., assignor of one-half to Fred A. Parsons, Milwaukee, Wis. Filed June 10, 1929. Serial No. 369,612. 8 Claims. (Cl. 62—126.)

1. A refrigerator provided with a plurality of chambers having their longer center lines angularly divergent and having communicating portions, said chambers being provided with a common door angularly intersecting said center lines at said portions and through which said chambers are substantially linearly accessible.

4. In a device of the character described, the combination with a container having faces angularly joined along their margins, of a tube having convoluted portions flatly associated with contiguous faces of said container, and an interconnecting portion traversing the angular margin between said faces in a direction more closely approaching the direction of said margin than a direction transverse thereto.

1,879,253. TELLURIUM RESISTOR FOR REFRIGERATORS. Edward H. Horstkotte, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed March 3, 1930. Serial No. 432,720. 5 Claims. (Cl. 201—63.)

1,879,253

1. A self-reducing resistor unit for electric circuits having a base of insulating material provided with a passage therein, a tellurium resistor filling said passage, said base having relatively high heat storage capacity for preventing a rapid decrease in resistance of said tellurium when said resistor unit is in use, and a resistor of substantially constant value in series with said first tellurium resistor and supported on the outside of said base whereby the unit is limited to a predetermined minimum value of resistance.

1,879,352. ABSORBER FOR REFRIGERATORS. Alvar Lenning, Stockholm, Sweden, assignor to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed May 7, 1930. Serial No. 450,416. 4 Claims. (Cl. 261—114.)

An absorber element for use in a gas and liquid contact apparatus for effecting a thorough commingling of the gas and liquid comprising a plate having ribs on its upper surface along its central portion in overlapping relation, said plate having openings with raised rims at one side of said ribs and an imperforate portion at the opposite side of said ribs, the rim of one of the openings being cut through to provide a discharge passage whereby liquid deposited upon the plate on the side remote from the discharge openings will be required to travel over the plate in a circuitous path between said ribs to said discharge opening.

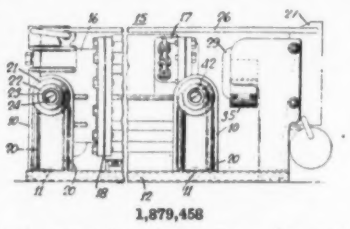
1,879,368. FREEZING TRAY FOR REFRIGERATORS. McDonald Lovell and Victor Sussin, Chicago, Ill. Filed June 28, 1930. Serial No. 464,572. 6 Claims. (Cl. 62—108.5.)

1. A freezing mould comprising a tray-like receptacle composed of a material having high thermal conductivity, and a plurality of containers also having high thermal conductivity disposed in said receptacle and secured in such relationship that the wall portions of respective containers are spaced from those of others and from the receptacle walls, the spaces between the containers having openings at the top and the receptacles being open at the top, for admission of fluid into the spaces about the containers.

1,879,400. ICE TRAY. Jack J. Mitchell, St. Petersburg, Fla. Filed Aug. 20, 1930. Serial No. 476,671. 2 Claims. (Cl. 62—108.5)

1. In a freezing tray, a plurality of separate compartments adapted to contain liquid to be frozen into separate blocks, a vertically movable member extending into said compartments to lift the frozen blocks, a threaded shaft rotatable in said member, and means threadedly engaged with the shaft and operable when the latter is rotated to move said member vertically.

1,879,458. SUPPORT FOR POWER DRIVEN UNITS. Frank D. Peltier, Evansville, Ind., assignor, by mesne assignments, to Servel, Inc., New York, N. Y., a Corporation of Delaware. Filed July 17, 1930. Serial No. 468,678. 2 Claims. (Cl. 248—16.)



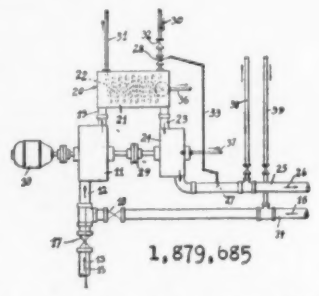
1,879,458

2. A supporting device for a fan motor and condenser comprising a base, uprights secured in opposed relation on said base and having forwardly projecting portions, a transverse motor supporting cradle carried by the rear portions of said uprights, means for securing said motor in said cradle, and means for resiliently supporting said condenser in the forwardly projecting portions of said uprights.

1,879,602. FLEXIBLE SHARP FREEZING CONTAINER. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Co., Flint, Mich., a Corporation of Michigan. Filed June 20, 1928. Serial No. 286,837. 8 Claims. (Cl. 62—108.5.)

1. A sharp freezing container of the type adapted to be utilized in connection with mechanical refrigerating systems, comprising a container having walls formed of relatively thin flexible rubber, the upper edge of the outer walls of the container terminating in a relatively large continuous bead for reinforcing and maintaining the shape of the thin flexible walls, whereby the container may be readily manipulated as an individual unit when filled with liquid.

1,879,685. COOLING AND HEATING SYSTEM. Joseph Jaczko, Youngstown, Ohio. Filed Feb. 4, 1931. Serial No. 513,259. 1 Claim. (Cl. 257—9.)



1,879,685

In a device for cooling rooms and the like, means to compress air, means to cool the compressed air, means to expand such compressed and cooled air, said cooling means condensing the humidity of the air to a predetermined degree and being provided with means for removing the liquid so condensed, and means to convey said expanded air into the premises to be cooled, said compressed air being cooled by water travelling in a counter direction thereto, means to regulate the amount of said cooling water, said means being operated by a thermostat in the cooled air line.

1,879,893. REFRIGERATING COMPOSITION. Frank J. Dobrovolny, Niagara Falls, N. Y., assignor, by mesne assignments, to The Roessler and Hasslacher Chemical Co., New York, N. Y., a Corporation of Delaware. Filed Feb. 10, 1930. Serial No. 427,424. 4 Claims. (Cl. 252—5.)

2. A composition of matter comprising methyl chloride containing 1% to 6% by weight of chloropicrin.

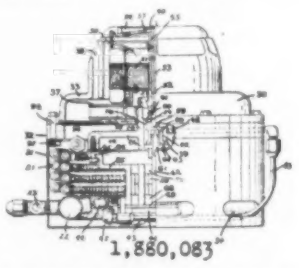
1,879,922. REFRIGERATING UNIT. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Co., Flint, Mich., a Corporation of Michigan. Filed Dec. 10, 1927. Serial No. 239,053. 9 Claims. (Cl. 62—95.)

6. A refrigerating unit comprising a cabinet, a food compartment and a refrigerating mechanism compartment positioned therein, and a sharp freezing chamber having a wall formed by one of the walls of the food compartment positioned in said second named compartment, said food compartmment and sharp freezing chamber being formed integrally from plastically applied material allowed to harden.

1,880,021. ACCESSORY UNIT FOR DOMESTIC FREEZING APPARATUS. Gordon C. McCauley, Boston, and Joseph Lewis Hallett, Braintree, Mass. Filed Dec. 13, 1930. Serial No. 502,174. 1 Claim. (Cl. 259—109.)

As a new article of manufacture, a portable self-contained mix-holding accessory unit for insertion within the freezing compartment of an automatic domestic freezing apparatus, said unit comprising a container comprising a bottom wall, two side walls, and two end walls; a closure lid removably fitted to the tops of said side and end walls, an agitator element within and removably supported by said container so as to turn on a horizontal axis; an electric motor for driving said element, said motor being disposed upon the exterior of said container opposite one of said end walls and below the level of the top of said closure lid; means separably and positively fastening said motor to said container; and a power transmitting mechanism connecting said agitator element with the armature shaft of said motor by which said agitator element is held in position within said container but so that removal of said motor permits of removal of said agitator element from said container.

1,880,083. REFRIGERATING APPARATUS. Robert M. Getchell, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware. Filed July 30, 1928. Serial No. 296,363. 10 Claims. (Cl. 62—115.)



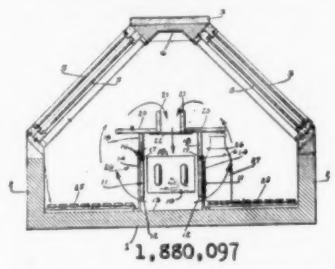
1,880,083

1. A refrigerating apparatus comprising a vertical casing, a motor and compressor in said casing, a condenser in said casing, a plate located between said motor and compressor adapted to direct air flow in said casing, and a fan driven by said motor adjacent said plate for driving air upwardly through said casing.

1,880,093. LIQUID AND AIR CIRCULATING REFRIGERATOR. Charles H. Huston, Allerton, Iowa. Filed April 6, 1931. Serial No. 527,889. 5 Claims. (Cl. 62—31.)

1. In a device of the class described, a housing, a vertical tank inside said housing having some of its sides spaced from the inner sides of said housing, a compartment inside said tank, a door communicating with the inside of said compartment, a second tank inside said housing and having some of its sides spaced apart from the inner sides of said housing, a pipe having one of its ends communicating with the inside of said first mentioned tank and its other end communicating with the inside of the second tank, a compartment above said second tank, a door communicating with the inside of said last mentioned compartment, an outlet pipe communicating with the inside of said second tank, and insulating material embracing a portion of each of said tanks for encouraging the circulating of air inside said housing.

1,880,097. REFRIGERATING DEVICE. Charles E. Long, Minneapolis, Minn., assignor of one-half to Puffer-Hubbard Mfg. Co., Minneapolis, Minn., a Corporation of Minnesota. Filed Sept. 30, 1929. Serial No. 396,334. 7 Claims. (Cl. 62—89.5.)



1,880,097

1. A device of the class described including a refrigerating chamber, a refrigerating unit, a pair of baffles arranged vertically one at each opposite side of the unit, and having their lower ends spaced from the bottom of the chamber, said baffles extending above said refrigerating unit, and each having a shelf which partly overlies said unit, the said shelves being spaced apart to permit downward circulation of the air between said shelves and toward said refrigerating unit.

1,880,117. APPARATUS FOR FREEZING COMESTIBLES. Henry Torrance, New York, N. Y., assignor to The Carbondale Machine Co., Carbondale, Pa., a Corporation of Pennsylvania. Filed Feb. 14, 1929. Serial No. 339,834. 2 Claims. (Cl. 62—104.)

1. An apparatus for freezing comestibles including a chamber having a series of superposed troughs extending lengthwise thereof, said chamber having inlet openings in one wall adjacent to one end of each trough and outlet openings in the opposite wall adjacent to the other end of each trough, each trough having a stationary inclined wall leading from below the liquid level upwardly to the corresponding outlet opening, and means for forcing containers from each trough along said inclined wall and through said outlet opening.

1,880,184. APPARATUS FOR PRODUCTION OF BELLOWS TUBING. Walter B. Clifford, Boston, Mass., assignor to Clifford Manufacturing Co., Boston, Mass., a Corporation of Delaware. Filed Aug. 13, 1928. Serial No. 299,164. Renewed Jan. 28, 1932. 28 Claims. (Cl. 153—73.)

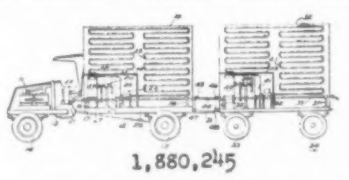
1. Apparatus for producing bellows tubing comprising a die assembly, movable members designed to engage opposite ends of a tube within the assembly, means for simultaneously moving the members toward one another into operative position in engagement with the tube, means for introducing fluid pressure to the interior of the tube through one of the members, and means for thereafter imparting a continued movement of approach to one of the members to contract the tube while subjected to the internal fluid pressure.

ISSUED OCT. 4, 1932

1,880,232. REFRIGERATING APPARATUS. Clarence Birdseye, Gloucester, Mass., assignor, by mesne assignments, to Frosted Foods Co., Inc., Dover, Del., a Corporation of Delaware. Filed April 10, 1929. Serial No. 354,103. 19 Claims. (Cl. 62—104.)

1. Refrigerating apparatus including an inclined runway for holding a series of circular containers arranged in contact with each other, power operated means for controlling the rate of movement of said containers along the runway, said means being arranged to engage the containers while resting on and traveling along the runway, and means for flowing liquid cooling medium over the containers.

1,880,245. REFRIGERATOR VEHICLE AND TRAILER. Wilfred Fourness, Oakland, and Edward G. Burghard, Los Angeles, Calif., assignors to Fourness Development Corp. Ltd., New York, N. Y., a Corporation of New York. Filed Nov. 7, 1930. Serial No. 494,048. 16 Caims. (Cl. 62—117.)



1,880,245

2. In combination with a motor driven vehicle, a circulatory refrigerating system within the body thereof operated by said motor, and one or more vehicle bodies secured thereto, each of said bodies having circulatory refrigerating systems therein.

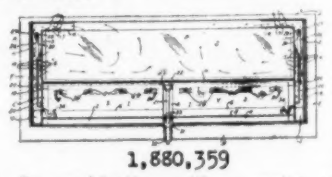
1,880,251. LATCH ASSEMBLY FOR REFRIGERATOR DOORS. Anton N. Hornung, Los Angeles, Calif. Filed Oct. 9, 1929. Serial No. 398,399. 2 Claims. (Cl. 292—173.)

1. In a latch, a housing having a latchway open forwardly and rearwardly and having side walls spaced apart and provided in their faces with panel seats and threaded sockets for panel securing screws provided with bearing extensions having holes for anchor screws; a latch arranged with its body slidable in the latchway and its latching end extended forwardly beyond the housing; a spring in the housing to yieldingly hold the latching end of the latch fully extended; latch retracting means connected to the latch and extending through the rearward opening; a roller mounted in the bearings and extending peripherally into the slide way to form an antifriction support for the latching end of the latch; a panel in the panel seats and screws in the sockets to hold the panels in the panel seats.

1,880,280. RESILIENT SUPPORT. John R. Replogle, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed Sept. 3, 1931. Serial No. 560,925. 7 Claims. (Cl. 248—16.)

1. The combination with a refrigerator cabinet, having a unit compartment and a refrigerating unit disposed therein, of a mounting for securing the unit in the cabinet, comprising a bar member rigidly secured to the cabinet, means including a threaded member secured to said bar member and extending beyond the unit base, for yieldingly supporting the unit, the means including a rubber member fixed to an inverted cup-shaped member, the cup-shaped member being rigidly mounted on a member co-acting with the threaded member, for securing the unit against movement in the cabinet.

1,880,359. REFRIGERATING APPARATUS. Donald E. Rutishauser, St. Louis, Mo., assignor to Hussmann-Ligonier Co., St. Louis, Mo., a Corporaiton of Delaware. Filed Aug. 6, 1931. Serial No. 555,495. 10 Claims. (Cl. 62—89.6.)



1,880,359

1. In combination with a casing of a refrigerating apparatus, a brine-spraying system arranged within said casing, said brine-spraying system comprising an independent unit with relation to said casing and including housings at opposite ends of the casing and a housing in the lower portion of said casing through which air is circulated, means for placing said housings in communication with each other, and brine-spraying devices for spraying chilled brine into said housings whereby the air circulated therethrough is refrigerated.

1,880,509. REFRIGERATING APPARATUS. Jesse C. Smith, New York, N. Y. Filed Dec. 24, 1928. Serial No. 328,084. 18 Claims. (Cl. 62—5.)

1. In refrigerating apparatus, an absorber, a reservoir adapted to receive liquor from the absorber, and a gravity opened valve controlling the communication between the absorber and reservoir, said valve being constructed and arranged to open when the force of gravity on the valve and the pressure in the absorber overcome the pressure in the reservoir.

1,880,525. ABSORBER FOR REFRIGERATORS. Robert S. Taylor, New York, N. Y., assignor to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed May 7, 1930. Serial No. 450,415. 13 Claims. (Cl. 261—114.)

1. In a refrigerator, an absorber comprising an outer shell, a plurality of spaced plates within said absorber for producing contact between gas and liquid, said plates having apertures therein, an obstruction about each of said apertures, an obstruction disposed between a pair of the apertures

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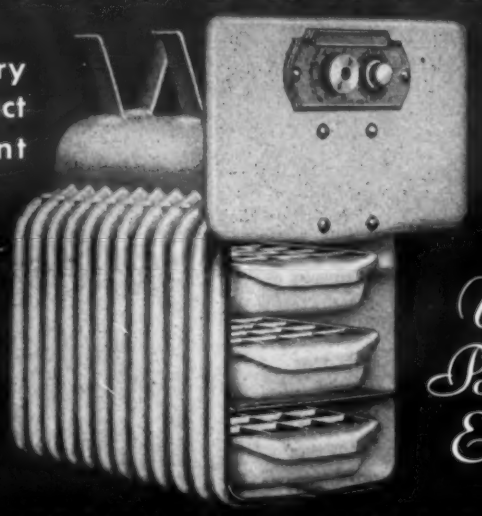

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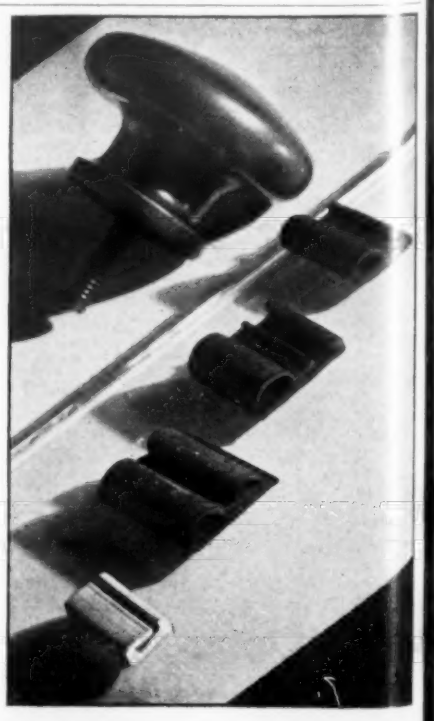


IN FIELD OF ELECTRIC REFRIGERATION

(Continued from Page 6, Column 5)

tures for causing liquid deposited on one side of the obstruction to travel in a tortuous path to the other side, and an extension at the side of one of the apertures for directing the flow of gas passing through the plate.

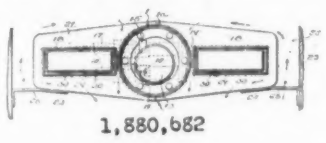
1,880,533. HEAT EXCHANGER. Albert R. Thomas, New York, N. Y., assignor to Servel Sales, Inc., New York, N. Y., a Corporation of Delaware. Filed Feb. 3, 1932. Serial No. 590,551. 6 Claims. (Cl. 257—246.)

1. A gas heat exchanger comprising an outer tubular shell having an opening adjacent each end thereof for the circulation of gas therethrough, and an inner tubular shell within said outer shell and forming therewith an outer annular passage closed at each end and an inner tubular passage, said inner shell being formed of a plurality of nested metal cups, each cup formed with integral vanes extending outwardly around its rim into the said annular passage and having its bottom cut and bent to form vanes extending into said tubular passage.

1,880,653. REFRIGERATING APPARATUS. Ernst S. H. Baars, Milwaukee, Wis., assignor to The Vilter Manufacturing Co., Milwaukee, Wis., a Corporation of Wisconsin. Filed Sept. 4, 1931. Serial No. 561,148. 8 Claims. (Cl. 62—3.)

1. In a refrigerating system, an evaporator, a valve operable by gas pressure in the system to control the delivery of liquid refrigerant to said evaporator, and a valve operable by a liquid level in the system to control the operation of said gas operable valve.

1,880,682. EVAPORATOR. William E. Bihl, and Axel Ramclaw, Chicago, Ill., assignors to Zerozone, Inc., Chicago, Ill., a Corporation of Delaware. Filed March 3, 1930. Serial No. 432,916. 8 Claims. (Cl. 62—95.)



1,880,682

2. In a refrigerating unit, a container for a refrigerant, said container being a good conductor of heat, and a plurality of substantially rectangular heat conducting fins secured upon the container in thermal connection therewith, the fins being disposed transversely of the container, and means carried by said fins for directing descending air around said container.

1,880,731. BATCH FREEZER MECHANISM. Arthur H. Boileau, Cedar Rapids, Iowa, assignor to Cherry-Burrell Corp., Cedar Rapids, Iowa, a Corporation of Delaware. Filed Nov. 1, 1930. Serial No. 492,641. 10 Claims. (Cl. 259—102.)

1. In a batch freezer mechanism, a freezer housing, a dasher in said housing and comprising fixed and movable dasher members, a driving means disposed out of said housing and connected to said dasher, and means in said driving means for controlling the operation of said driving means whereby said dasher may be operated as a unit or with the movable dasher members operating additionally to the unit movement.

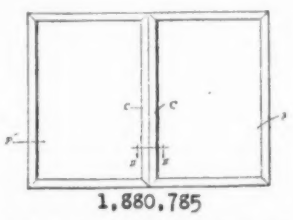
1,880,735. REFRIGERATOR. Charles E. Bonine, Melrose Park, Pa., assignor to James H. Bell, Philadelphia, Pa. Filed July 17, 1929. Serial No. 378,842. 2 Claims (Cl. 62—91.5.)

1. In a refrigerator of the character described, a thermo insulated casing affording a chamber for solid carbon dioixde; a chamber for the articles being refrigerated; passages determining flow of the cold gas liberated incident to sublimation of the solid carbon dioxide, down along one end of the refrigerating chamber, across the bottom of the same and up along the opposite end previous to entering said refrigerating chamber at the top for descent about the articles in said refrigerating chamber; and passages to conduct the gas from the bottom of said refrigerating chamber upward along the outer faces of its opposite side walls before being permitted to escape from the refrigerator.

1,880,758. HUMIDIFYING APPARATUS. George C. Brown, Worcester, Mass. Filed May 28, 1931. Serial No. 540,701. 1 Claim. (Cl. 237—78.)

A humidifying apparatus for a radiator having openings extending vertically and longitudinally between spaced portions of said radiator and arranged in a plurality of superposed series, said apparatus comprising a plurality of evaporating units positioned in corresponding superposed series in said openings, a spray pipe through which water is fed continuously and at a predetermined rate to the upper evaporating unit of each series, means to provide a continuous supply of water to said spray pipe from a separate source outside of and disassociated from said radiator, and manual means to regulate the flow of water to said spray pipe, each lower evaporating unit in said series being positioned to receive the unevaporated moisture of the next higher unit and to further the evaporation thereof, and each evaporating unit being separately insertable and removable from operative position in its radiator opening.

1,880,785. EDGE PROTECTION FOR FIBER BOARDS. Jerome T. Card, Cincinnati, Ohio, assignor to Masonite Corp., Chicago, Ill., a Corporation of Delaware. Filed Sept. 2, 1930. Serial No. 479,154. 7 Claims. (Cl. 154—45.9.)



1,880,785

7. A sheet formed of disintegrated wood fibers having its edges bound by a thin pliable coating of metal foil intimately held thereto by an asphalt cementing compound.

1,880,829. MERCURY SWITCH. Paul K. Cramblet, Milwaukee, Wis., assignor, by mesne assignments, to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a Corporation of Delaware. Filed Jan. 24, 1927. Serial No. 163,027. 2 Claims. (Cl. 200—152.)

1. A mercury switch comprising an outer envelope of soft glass provided with spaced wells and a connecting portion between said wells, tubes disposed in the wells in spaced relation to the walls thereof and constituted of a substance capable of withstanding high temperatures and rapid temperature fluctuations, cement impregnated ring-like partitions of asbestos interposed between the tubes and the wells for supporting the tubes on the wells and blocking the space between the outer periphery of the tubes and the inner walls of the wells to make the openings of the tubes the only means of communication between the wells and the connecting portion of the outer envelope, a body of mercury having portions filling the wells and the tubes, and a shiftable portion located in the connecting portion of the envelope and alternately making and breaking contact with the portions of the mercury in the tubes, and electrodes sealed in the outer soft glass envelope and immersed in the mercury.

1,880,832. MERCURY SWITCH. Paul K. Cramblet, Weslaco, Texas, assignor, by mesne assignments, to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a Corporation of Delaware. Original application filed Aug. 20, 1927, Serial No. 214,373. Divided and this application filed July 30, 1930. Serial No. 471,651. 3 Claims. (Cl. 200—152.)

1. A mercury switch comprising an outer envelope, an inwardly extending boss carried by the outer envelope, an electrode extending in through the boss, and a sleeve surrounding the electrode and the boss, and yieldable means supporting the sleeve on the boss.

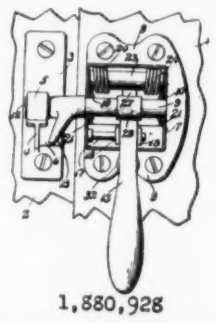
1,880,877. REFRIGERATING APPARATUS. Herman J. Dick, Dayton, Ohio, assignor to Frigidaire Corp., of Dayton, Ohio, a Corporation of Delaware. Filed March 31, 1928. Serial No. 266,295. 10 Claims. (Cl. 62—99.)

3. A refrigerating element for cooling circulating air comprising a pate formed of heat conducting material and adapted to be exposed to air currents and integral fins formed from the body of the plate projecting therefrom so as to be exposed to air currents circulating thereover, and a conduit for circulating refrigerant interspersed between the fins and secured in intimate thermal contact with the plate.

1,880,903. HUMIDIFYING. William Poole Dryer, Newton, Mass. Filed May 7, 1930. Serial No. 450,405. 8 Claims. (Cl. 122—459.)

1. Mechanism for humidifying to a desired degree a stream of gas which comprises, in combination with a conduit for the stream, a liquid injection tube having a multiplicity of small perforations in the side thereof for the exit of liquid, means for gradually projecting said tube into the stream, and means closing the perforations of the unprojected portion of the tube.

1,880,928. REFRIGERATOR LATCH. Andrew Ekman, Grand Rapids, Mich., assignor to Winters & Crampton Mfg. Co., Grandville, Mich., a Corporation of Michigan. Filed Jan. 13, 1930. Serial No. 420,387. 5 Claims. (Cl. 292—223.)



1,880,928

1. A latch structure comprising, a housing, a shaft mounted therein for rocking movement, said shaft at one end having a crank portion adapted to engage with a keeper, a metal band located around and secured to the rock shaft having spaced apart teeth extending radially therefrom, a handle pivotally mounted on the housing having spaced openings at its inner end in which said teeth are received on pivotal movement of the handle thereby rocking the rock shaft, said band at one end being formed into a curved section projecting away from the rock shaft, a link seated at one end in the socket made by said curved portion of the band, and spring means bearing against the opposite end of the link and with which said opposite end of the link has a pivotal connection, substantially as and for the purpose described.

1,880,929. LOCKING REFRIGERATOR LATCH. Andrew Ekman, Grand Rapids, Mich., assignor to Winters & Crampton Mfg. Co., Grandville, Mich., a Corporation of Michigan. Filed May 19, 1930. Serial No. 453,554. 6 Claims. (Cl. 70—29.)

1. A latch construction comprising, a housing, a lever pivotally mounted between its ends on and within said housing, a part of said lever extending through one side of the housing outside thereof, said outer portion of the latch lever being movable to an upper or a lower position, a base plate closing the inner side of the housing, and a lock bolt slidably mounted thereon and movable to a position to interpose in the path of movement of the inner end of the lever when the outer end of the lever is in lower position, to hold the lever against pivotal movment.

1,880,969. REFRIGERATING SYSTEM. Glenn Muffly, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed Dec. 9, 1929. Serial No. 412,626. 1 Claim. (Cl. 62—95.)

A refrigerator system having a brine tank filled with a liquid selected from a class comprising turpentine, rapeseed oil and aniline, the brine being capable of freezing without substantial expansion, in the normal operating range of the system.

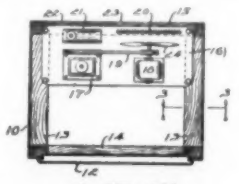
1,880,973. HUMIDIFIER AND HEATER. James E. Myers, Whitefish Bay, Wis. Filed March 16, 1931. Serial No. 522,978. 3 Claims. (Cl. 219—38.)

1. A device of the character described including a housing, a water supply tank removably mounted therein, traction means for supporting said housing, a heating tank within the housing, a heater removably mounted within the housing and supported adjacent the heating tank, a baffle plate at one side of the supply tank having an inclined upper end portion, a receiving trough at the lower end of said plate, said housing having an opening adjacent the heating tank whereby the heat from the heater and the vapor from the heating tank will be guided through the opening by the inclined upper portion of the baffle plate, a switch for controlling the heater, and means actuated by the movement of the fluid in the supply tank for actuating said switch.

1,880,985. BOTTLE OPENER FOR REFRIGERATORS. John B. Saunders, Bloomfield Hills, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed May 4, 1931. Serial No. 534,877. 7 Claims. (Cl. 65—46.)

1. In combination with a member having a pair of fixed surfaces disposed in angular relation with respect to each other, a bottle opener including a pair of angularly disposed portions having surfaces complementary to the first mentioned surfaces and fixed thereto, whereby said opener is reinforced by said member.

1,881,006. REFRIGERATING MECHANISM. Frank R. West, Highland Park, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed Dec. 4, 1929. Serial No. 411,402. 7 Claims. (Cl. 62—116.)



1,881,006

1. In a cabinet for a mechanical refrigerating mechanism, in combination, means for supporting said cabinet from a floor for the flow of air below the same, a compartment in the lower portion of said cabinet, one of the vertical walls of said cabinet having an opening therein for the passage of air therethrough and the remaining vertical walls of said cabinet being imperforate, the bottom of said compartment being open, a unit base supported within said compartment and forming a baffle for closing the portion of said open bottom adjacent the perforated vertical wall, a condenser supported by said base in proximity to said opening in said side walls, a motor supported on said base, and a fan, positioned to suck air through said bottom and force it out through said opening, in driving relation with respect to said motor.

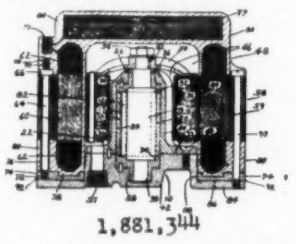
1,881,079. SHIP REFRIGERATION. Paul Wjnans 'Hiller, Wilmington, Calif. Filed Sept. 20, 1930. Serial No. 483,155. 8 Claims. (Cl. 62—14.)

1. In a ship having a deck which slopes downwardly to the sides, a cold storage room bounded on the top by a deck wall having the approximate camber of the deck, a plurality of athwart-wise extending coils constituting part of an expansion cycle of a refrigerating system and disposed in close proximity to said wall, said coils being in the form of grids with headers extending lengthwise of the ship and at different elevations, and parallel connecting pipes between said headers extending transversely of the ship and substantially following the transverse camber of the deck.

1,881,208. REFRIGERATING SYSTEM. Cyril Aubyn Masterman, Surrey, England, assignor to The Gas Light & Coke Co., Westminster, London, England. Filed Aug. 21, 1929. Serial No. 387,377, and in Great Britain Sept. 1, 1928. 9 Claims. (Cl. 62—5.)

8. In refrigerating apparatus, a plurality of generators, means for heating said generators, and stationary means within said heating means for discontinuing the heating of one of said generators and starting the heating of a second of said generators.

1,881,344. MOTOR COMPRESSOR. Vincent G. Apple, Dayton, Ohio. Filed Jan. 16, 1931. Serial No. 509,112. 2 Claims. (Cl. 230—139.)



1,881,344

2. A motor compressor comprising a hollow stator body open at the bottom end, a bearing head secured to said open end forming a vacuum tight motor chamber and having an opening adapted for connecting said motor chamber to the suction line, a hollow compressor casing open at the bottom end secured to the inner wall of said bearing head forming a pressure tight compressor chamber, said bearing head having a second opening adapted to connect said compressor chamber to the discharge line, a bearing on the inner surface of said bearing head within said compressor chamber, a second bearing in the closed end of said compressor casing, a compressor rotor within the compressor chamber having rotative support in said bearings and having a stub end extending through the bearing at the closed end into the said motor chamber, a driving spider secured to said stub end for rotation therewith, and a hollow electric motor rotor depending from the under face of said spider into the space within said motor chamber surrounding said compressor casing, there being a suction opening in the wall of said compressor casing connecting the compressor and the motor chambers.

1,881,374. AIR COOLING AND CIRCULATING DEVICE. William B. Plympton, Donald Plympton, and Ralph A. Plympton, Ellwood City, Pa. Filed Jan. 21, 1928. Serial No. 248,539. 21 Claims. (Cl. 62—95.)

1. The combination of an air cooling and circulating device comprising a pair of upright, substantially parallel refrigerant containing members, spaced to form an air duct, and a hold-over within the air duct.

1,881,418. PROCESS OF MAKING PANEL BOARD. Elbert C. Lathrop and Fergus A. Irvine, Chicago, Ill., assignors to The Celotex Co., Chicago, Ill., a Corporation of Delaware. Filed June 7, 1930. Serial No. 459,824. 15 Claims. (Cl. 92—40.)

1. The process of producing a hard, dense, homogeneous, and strong board-like material from wood, straw, sugar cane bagasse, and the like, comprising the steps of the separation of the raw material into fiber bundles and fibers with subsequent washing, sheeting, and compacting of the previously separated matter, the compacting accomplished by the application of high pressure to the sheeted material with simultaneous subjection of the interior of the sheet to high pressure steam, the step of compacting initiated, through the addition of a buffer salt, under highly buffered alkaline conditions.

DESIGNS

87,873. LATCH FOR REFRIGERATORS. Harry Dubinsky, Brooklyn, Irving Goldenberg, Brooklyn, and Max Schachter, New York, N. Y. Filed June 22, 1932. Serial No. 44,159. Term of patent 3½ years.

87,882. REFRIGERATOR CASING. John K. Olsen, Chicago, Ill., assignor to Stewart-Warner Corp., Chicago, Ill., a Corporation of Virginia. Filed Aug. 10, 1932. Serial No. 44,569. Term of patent 7 years.

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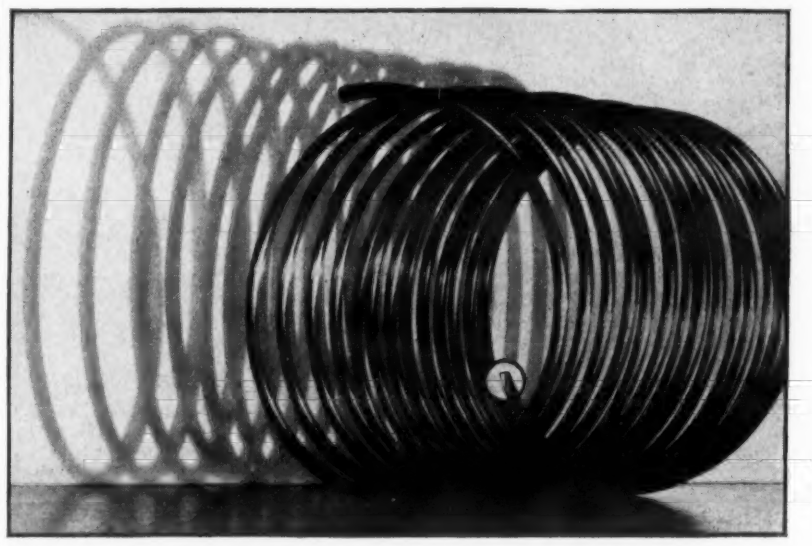

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